STATE OF NEW YORK
NDR ACTION PLAN
FOR COMMUNITY DEVELOPMENT BLOCK GRANT – DISASTER RECOVERY

(Incorporating HUD National Disaster Resilience Competition Application Phases 1 & 2 and the DRGR Action Plan)

Utilizing Supplemental CDBG Disaster Recovery Funding from the Allocation, Common Application, Waivers, and Alternative Requirements for the National Disaster Resiliency Competition Community Development Block Grant Disaster Recovery Grantees under the Department of Housing and Urban Development Appropriations Act, 2013

(Public Law 113-2)

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Governor's Office of Storm Recovery

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THE STATE OF NEW YORK

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

NATIONAL DISASTER RESILIENCE COMPETITION

PHASE 2 APPLICATION

REIMAGINING RESILIENCE

OCTOBER 27, 2015

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Exhibit A Executive Summary
New York State
ExhibitAExecutiveSummary_NYS.pdf

New York State (the State) is committed to implementing a comprehensive and community-driven approach to disaster recovery with the goal of making vulnerable populations more resilient to acute shocks, including extreme coastal and riverine flooding events, as well as chronic stresses like climate change, economic instability, and environmental degradation. The State believes this is best achieved through an integrated approach rooted in addressing and leveraging the interconnectedness of systems and by investing in transformative, scalable interventions with multiple benefits. The projects and programs proposed in this application aim to support a resilient recovery by enhancing the physical, economic, social, and environmental resilience of the Empire State's coastal and riverine communities.

Reimagining Resilience, the State's Phase 2 application to the National Disaster Resiliency Competition (NDRC), builds upon ongoing resiliency efforts, while incorporating newly-understood risks, lessons learned from existing NY Rising programs, and iterative stakeholder involvement. The Governor's Office of Storm Recovery (GOSR), established by Governor Andrew M. Cuomo after Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee, is spearheading the development of this application on behalf of the State.

Reimagining Resilience is a targeted strategy that focuses on reducing the remaining Unmet Recovery Need (URN) in housing, infrastructure, and economic revitalization within Most Impacted and Distressed (MID) Target Areas (Target Area). The State has reframed and updated the Target Areas proposed in Phase 1 to include the following counties: Broome, Orange, Greene, Nassau, Rockland, Schoharie, Suffolk, Tioga, Ulster, Westchester, as well as the five counties of New York City (NYC). In the 10 non-NYC counties, the State has estimated more than $3.5 billion in housing URN and almost $2.2 billion in infrastructure URN. In response to these needs, this application proposes two projects and four programs, which enhance the resilience of vulnerable communities impacted by coastal and riverine flooding and further threatened by climate change. The first set of

proposals will create protections for highly-vulnerable, low- and moderate- income (LMI) residents of public housing and manufactured home communities:

- Manufactured Home Community Resiliency Pilot Program
- Public Housing Resiliency Pilot Project

The second group of proposals is aimed at increasing the resilience of infrastructure, upgrading it to withstand changing conditions—many exacerbated by climate change—by right-sizing culverts, bridges, and dams, and upgrading the Bay Park Sewage Treatment Plant:

- Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program
- Right-Sizing Bridges Resiliency Program
- Right-Sizing Critical Dams Resiliency Project
- Nassau County Outfall Pipe and Bay Resiliency Project

The estimated total cost of these programs is $865,009,610. After leveraging federal, State, local, and private funds, the CDBG-NDR request, as outlined in this proposal, is $469,939,679. These proposed projects and programs reflect insights from the State's ongoing recovery and resiliency efforts. They target system weaknesses and pockets of vulnerability that require additional investment to address unmet recovery and resiliency needs.

In developing this application, GOSR has consulted with State agencies, county governments, academic institutions, advocacy groups, and other stakeholders. It is partnering with the NYS Department of Environmental Conservation (DEC), the NYS Department of Transportation (DOT), the NYS Division of Homes and Community Renewal (HCR), and the NYS Office of Parks, Recreation and Historic Preservation (Parks), along with the Binghamton Public Housing Authority (PHA), Freeport PHA, Hempstead PHA, Long Beach PHA, Enterprise Community Partners, Opportunity Long Island, Cornell University's NYS Water Resource Institute, The Nature Conservancy (TNC), and Nassau County to leverage technical capacity, expertise, and in some instances, project funds. In

addition, the proposed projects and programs are supported by commitments of leverage from various sources, including the Catskill Watershed Corporation (CWC), Community Preservation Corporation (CPC), Enterprise Community Investments, Inc., Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program Funds, FEMA Public Assistance (PA) Funds, Georgica Greene Ventures LLC, the Leviticus Alternative Fund, the NYS Environmental Facilities Corporation (EFC), and the Palisades Interstate Park Commission. The proposals outlined here present innovative, replicable, and scalable resiliency interventions designed to reduce the impacts of coastal and riverine flooding in the State's most impacted communities and position the State as a leader in recovery, resiliency, and revitalization.

Project	**CDBG-NDR Request**	**Leveraged Funds**	**Partner(s) and Leverage Sources(s)**
Manufactured Home Community Resiliency Pilot	**$ 48,974,461**	$ 21,000,000	NYS Department of Homes and Community (HCR) Renewal Housing Finance Agency; Community Preservation Corporation (CPC); Leviticus Alternative Fund
Public Housing Resiliency Pilot	**$ 35,800,000**	$ 31,986,000	NYS Department of Homes and Community (HCR) Renewal Housing Finance Agency; Binghamton Public Housing Authority (PHA), Freeport PHA; Hempstead PHA; Long Beach PHA; Enterprise Community Partners; Opportunity Long Island; Enterprise

			Community Investment, Inc.; Freeport Developer Deferred Fee, Georgica Greene Ventures LLC; FEMA Public Assistance Funding
Right-Sizing Culverts and Restoring Natural Floodplains Resiliency	**$ 89,950,968**	$ 15,735,750	NYS Department of Environmental Conservation (DEC); Catskill Watershed Corporation; Cornell University's New York State Water Resources Institute; Local Match Commitment
Right-Sizing Bridges Resiliency	**$ 100,000,000**	$ 11,110,000	NYS Department of Transportation (DOT)
Right-Sizing Critical Dams Resiliency	**$ 44,590,500**	$ 4,960,000	NYS Parks Recreation and Historic Preservation (Parks); Palisades Interstate Park Commission
Nassau County Outfall Pipe and Bay Resiliency	**$ 150,623,750**	$ 299,376,250	Nassau County; Nassau County Capital Fund; NYS Environmental Facilities Corporation Storm Mitigation Loan Program; FEMA Hazard Mitigation Grant Program Funding
Total	**$ 469,939,679**	$ 384,168,000	

Exhibit B Threshold Requirements
New York State
ExhibitBThresholdReq_NYS.pdf

Eligible Applicant: As per the June 22, 2015, invitation from the U.S. Department of Housing and Urban Development (HUD), New York State is an Eligible Applicant to Phase 2 of the National Disaster Resilience Competition (NDRC). This is noted in the Crosswalk Checklist (Appendix J) in Attachment H. Partner Letters and Partner Agreements, which demonstrate a commitment to work collaboratively throughout the entirety of the grant, are included in Attachment A. This document is the sole application being submitted to this competition by the eligible applicant, the State.

Eligible County: The proposed CDBG-NDR activities benefit HUD-declared Most Impacted and Distressed (MID) counties impacted by a 2011, 2012, or 2013 presidentially-declared major disaster, as detailed in NOFA Appendix B.

Most Impacted and Distressed Target Areas: The State has established the following 10 counties as Target Areas that are HUD-recognized MID in NOFA Appendix B and have Unmet Recovery Needs (URN) in excess of the thresholds established in NOFA Appendix G: Broome, Greene, Nassau, Orange, Rockland, Schoharie, Suffolk, Tioga, Ulster, and Westchester. The State is designating the entirety of each MID county as a Target Area for one or more of the State's proposed projects and programs. The areas primarily benefitting from the proposed projects and programs are MID related to the effects of the Qualified Disaster(s) and have URN; however, the proposed projects and programs are scalable and replicable outside of these areas. The State also recognizes Bronx, Kings, New York, Queens, and Richmond as MID counties proposed in the New York City (NYC) NDRC application (Source 1). See the "Most Impacted and Distressed Target Areas Analysis" section below for a comprehensive URN analysis, and Exhibit D for a URN breakdown by Target Area.

Eligible Activity: Each proposed CDBG-NDR activity is an eligible activity, as outlined in Appendix A and under Section 105 of the Housing and Community Development Act (HCDA). Eligible activities proposed include Public Facilities and Improvements, HCDA 105(a)(2) (Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program, Right-Sizing Bridges

Resiliency Program, Right-Sizing Critical Dams Resiliency Project, Nassau County Outfall Pipe and Bay Resiliency Project); Clearance, Rehabilitation, Reconstruction, and Construction of Buildings and Improvements, HCDA 105(a)(4) (Manufactured Home Community Resiliency Pilot Program, Public Housing Resiliency Pilot Project); Public Services, HCDA 105(a)(8) (Public Housing Resiliency Pilot Project); Acquisition of Real Property HCDA 105(a)(1) (Manufactured Home Community Resiliency Pilot Program); and Planning, HCDA 105(a)(12) (Manufactured Home Community Resiliency Pilot Program, Public Housing Resiliency Pilot Project, Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program, Right-Sizing Bridges Resiliency Program, Right-Sizing Critical Dams Resiliency Project, Nassau County Outfall Pipe and Bay Resiliency Project).

Resilience Incorporated: All proposed CDBG-NDR activities will improve the resilience of one or more Target Area(s) to hazards, including coastal and riverine flooding and the effects of climate change. The Manufactured Home Community Resiliency Pilot Program will increase the resiliency of a vulnerable population—the residents of manufactured home communities—by implementing site and housing improvements to minimize vulnerability to flooding, or by voluntarily relocating residents out of the floodplain. The Public Housing Resiliency Pilot Project will be focused on protecting and enhancing the lives of residents of storm-impacted public housing developments, demonstrating a range of resilient interventions and reducing exposure to future disasters. The Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program, the Right-Sizing Bridges Resiliency Program, and the Right-Sizing Critical Dams Resiliency Project will all improve the resiliency of critical infrastructure to flooding and increasingly frequent extreme weather events, and will also decrease the impact of riverine flooding on neighboring communities as a result of right-sizing. The Nassau County Outfall Pipe and Bay Resiliency Project will dramatically improve water quality, restoring a natural buffer of wetlands that will protect communities from storm surge during extreme weather events.

Meet a National Objective: The State will ensure that all proposed activities meet a National

Objective. Proposals expected to meet the Low- and Moderate-Income (LMI) National Objective are the Manufactured Home Community Resiliency Pilot Project and Public Housing Resiliency Pilot Project. For the Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program and the Right-Sizing Bridges Resiliency Program, LMI communities and service areas will be prioritized in the selection process. If not LMI, these proposals will meet the Urgent Need National Objective. The Right-Sizing Critical Dams Resiliency Project, and the Nassau County Outfall Pipe and Bay Resiliency Project are expected to meet the Urgent Need National Objective.

Overall Benefit: The State understands that overall, over 50 percent of CDBG-NDR funds must be used to meet the National Objective of benefiting LMI income individuals, unless a waiver is requested and received. The State will request a waiver; see Attachment G.

Establish Tie Back: Each Target Area has a demonstrated tie-back to one or more of the Qualified Disaster(s) (Hurricane Irene DR-4020, Tropical Storm Lee DR-4031, and Superstorm Sandy DR-4085). As demonstrated in Exhibit E, each proposed project will have a tie-back to the Qualified Disaster(s) and each proposed program will require that all projects selected for implementation have a tie back to the Qualified Disaster(s). As Storm impacts are further outlined in Attachment F, Exhibit D, and Exhibit E.

Benefit-Cost Analysis (BCA): Although the NOFA only requires an applicant to complete a BCA for Covered Projects, the State has completed a BCA for each proposed project and program (see Attachment F). Each project and program has a BCA over one, and the proposals have an overall Benefit-Cost Ratio of 3.8.

CDBG-NDR Certifications: The State commits to all certifications, as outlined in Appendix F of the NOFA and certified in Attachment C. On August 27, 2015, the State formally requested to consult with the Sandy Regional Infrastructure Resilience Coordination (SRIRC) Group as part of the State's application to the NDRC. On September 1, 2015, HUD confirmed receipt of this request from the State

and noted that the State had fulfilled its obligation under the requirements of the NOFA (see Attachment D).

Most Impacted and Distressed Target Areas Analysis: The State has identified economic development, infrastructure, and/or housing URN in accordance with NOFA Appendix G thresholds across the ten County-level Target Areas identified above. The URN for each Target Area is described and quantified in Exhibit D. A MID URN Checklist for each Target Area is in Attachment I. Since submitting a Phase 1 application, the State further analyzed sources of URN in each MID county. This updated narrative analysis of URN uses the best available quantitative data and is informed by robust stakeholder engagement at the County level.

Economic Revitalization URN: In Phase 1, the State identified continuing economic revitalization URN as a result of the Qualified Disaster(s) in the Target Areas of Broome County, Greene County, and Tioga County that exceeds the threshold of 5 businesses outlined in NOFA Appendix G. The State cannot address this continuing economic revitalization URN with existing resources because the current CDBG-DR allocation is fully programmed and, in fact, insufficient to meet demand for existing programs. The State successfully established economic revitalization URN for Greene County in Phase 1, and reconfirmed data and methodology as part of this Phase 2 URN analysis.

Housing URN – Updated: The State's Action Plan Amendment 8 (APA 8) established at least $3.598 billion in housing URN as a result of the Qualified Disasters in the 10 Target Areas and $4.969 billion in housing URN throughout the State. After accounting for GOSR's awards and allocations to date for CDBG-DR housing programs, there is a remaining housing URN of $2.254 billion in the 10 Target Areas.

The State's current CDBG-DR funding allocation and other available funding sources are inadequate for addressing housing URN in the 10 Target Areas. In accordance with the thresholds

outlined in NOFA Appendix G—which allow for the consideration of extra costs to repair homes resiliently through elevation and other measures—the State is demonstrating housing URN due to oversubscription of specific measures within its single- and multi-family housing programs. The following housing URN analysis establishes the number of households not currently served by existing programs due to inadequate funding. The State considers the demonstrated program oversubscription to be a waiting list for the purposes of this competition only.

As noted above, the entirety of the State's allocation of CDBG-DR funding is committed to existing programs and cannot be reprogrammed to address this URN. The monitoring and case management costs of these programs further limit the State's ability to address URN. In the State's Single-Family Homeowner Program, applicants have demonstrated a high-demand, in excess of funds budgeted by the State, for costly resiliency measures, including elevation ($234.6 million in URN), bulkhead repairs ($83.1 million in URN), and other optional mitigation measures ($22.2 million in URN). In addition, over 2,250 applicants are seeking a "clarification" to increase their award, further contributing to URN. Beyond the single-family homeowner program, the State has over $41 million of URN in its Multi-Family/Affordable Housing Fund Program, and $36 million in URN in its Public Housing Assistance Relief Program. The State has also identified three manufactured home communities in need of assistance.

Single Family Homeowner Program: The State's Single Family Homeowner Program funds home repairs and mandatory elevation, as well as optional elevation, bulkhead repair/replacement, and other resiliency measures for the owners of single-family homes. The entire program budget, as per APA 8, is $1.056 billion. As of September 2015, the State had awarded $915,942,950 to approximately 11,500 program applicants. This figure includes over $500 million in resiliency measures. The remainder of this program budget will be needed to cover program delivery costs associated with compliantly administering and monitoring awarded and anticipated grants. Therefore, the State's

Single Family Homeowner Program is oversubscribed—and the State cannot address this budget gap with its current CDBG-DR allocation because all funds have been programmed to address other unmet recovery needs. More specifically, as outlined below, the State has identified significant URN for optional elevation, bulkhead repair/replacement, and other resiliency measures constituting a waiting list for the purposes of this competition only, in accordance with NOFA Appendix G thresholds.

Elevations: The Single Family Homeowner Program funds required home elevation for applicants with substantially damaged properties located in the 100-year floodplain and optional home elevation for non-substantially damaged properties located in the 100-year floodplain. The State has identified approximately 1,540 required elevations in the Target Areas—and has awarded $200.2 million to date, based on a $130,000 per unit cost estimate. The State has committed to funding all required elevations in the Target Areas. The State has also identified approximately 2,370 optional elevation applicants in the Target Areas—and has awarded approximately $308.1 million to date, based on the same $130,000 per unit cost estimate. However, more recent data analysis considering the high cost nature of the region estimates a per unit elevation cost of approximately $190,000—resulting in a URN of $60,000 per unit—totaling $234.6 million in housing URN. The State considers applicants with unfunded elevation costs to be a waiting list, demonstrating housing URN in accordance with NOFA Appendix G thresholds.

Bulkhead Repair/Replacement: The Single Family Homeowner Program allows for optional bulkhead repair and replacement. The State has identified over 1,400 applicants within the Target Areas. Programmatic data indicates that bulkheads in these areas will likely cost more than $65,000 per intervention, which amounts to a total need of almost $91.39 million for this resiliency measure. The State has awarded $8.3 million to date, leaving an URN of $83.1 million. The State considers the remaining applicants to be on a waiting list, demonstrating housing URN in accordance with NOFA Appendix G thresholds.

Other Mitigation Measures: The Single Family Homeowner Program funds optional resiliency measures, including flood vents and roof strapping. The State has identified almost 2,400 applicants in the Target Areas, with an estimated average request of $10,000 for these optional measures, totaling nearly $24 million in need. The State has awarded approximately $1.8 million to date, leaving an URN of $22.2 million. The State considers the remaining applicants to be on a waiting list, demonstrating housing URN in accordance with NOFA Appendix G thresholds.

Clarifications: In addition to these resiliency measures, applicants have the ability seek an increase in their repair grant award through a clarification in their award for reasons such as scope, hardship, or appealing another aspect of their award. In total, the State has over 2,250 open clarification requests from applicants at the time of this application. Given that the State's current CDBG-DR allocation is exhausted, without additional resources, the State considers all of these applicants to be on a waiting list, representing URN ranging from $25 to $50 million.

Multi-Family/Affordable Housing Fund: The State operates the Affordable Housing Fund (AHF) to support the preservation and development of affordable housing in storm-impacted communities outside of NYC. In APA 8, the State established a total program budget of approximately $100 million—$20 million of which was allocated to fund a loan program through the Community Preservation Corporation to finance small rental housing projects in storm-damaged communities. The remaining $80 million in the AHF was set aside for affordable housing development as part of the recovery process, and the State issued two Requests For Proposal (RFP) in 2014. The State received RFP responses totaling $101 million in qualified project proposals—and GOSR ultimately awarded $68.5 million to eleven winning projects. Six applicants, requesting a total of $32.5 million in CDBG-DR funds, did not received funding because they were unable to secure the necessary tax credit allocations or capital financing from HCR, which finances the majority of each AHF project. Therefore there is $11.5 million remaining in the AHF program budget—and a program oversubscription of $21

million.

For context, these six unfunded applicants proposed a total of 268 housing units; of these, 98 units were proposed in the Target Area of Ulster County and 28 were proposed in the Target Area of Suffolk County. It is also important to note that the State did not receive any RFP responses proposing projects in Nassau County, and therefore has not had the opportunity to through the AHF to address the substantial unmet recovery needs of the LMI rental population in Nassau County. Evidence from other agencies and stakeholders suggests that the lack of responses is due in part to the particularly high cost of land acquisition in Nassau County and the lack of available sites.

In addition to the $21 million oversubscription identified via the RFP process noted above, GOSR and its financing partner, the New York State Housing Finance Agency (HFA), are aware of several new projects that are likely to require at least $20 million in CDBG-DR funds. In total, the State has identified approximately $41 million in URN, beyond the existing $11.5 million remaining in the AHF program budget. For the purposes of this competition, this oversubscription constitutes a waiting list.

Public Housing Assistance Relief Program (PHARP): PHARP addresses the unmet recovery needs of Public Housing Authorities (PHAs) outside of NYC. The Program is currently funded through the AHF, as well as through the Non-Federal Share Match Program. As noted in prior Action Plans, the State has committed $10 million to PHARP for eligible PHA repair and rehabilitation. Since APA 8, the State has identified approximately $36 million in additional resiliency measures for PHAs. Due to the AHF oversubscription described above, as well as the full commitment of GOSR's other storm recovery programs, there is little chance there will be additional AHF funds to support PHARP. Therefore, the State considers this $36 million housing URN for both Broome and Nassau County. The proposed CDBG-NDR Public Housing Resiliency Pilot Project will fund rebuilding and recovery efforts in Freeport, Long Beach, Hempstead PHAs (all in Nassau County), and Binghamton PHA (Broome County). These efforts are detailed in Exhibit E. The State considers the remaining applicants

to be on a waiting list, demonstrating housing URN in accordance with the NOFA Appendix G thresholds.

Manufactured Home Communities: As part of the NY Rising Community Reconstruction (NYRCR) Program, the State identified at least three manufactured home communities that were inundated during a Qualified Disaster in the Orange County and Rockland County MID Target Areas. Two communities, containing a combined 175 homes, were identified as the sites of "Additional Resiliency Recommendation" projects in the NYRCR Final Plan for the Village of Washingtonville (Orange County) (Source 2) and one, containing 114 homes was identified in the NYRCR Final Plan for Stony Point (Rockland County) (Source 3). While recovery efforts have continued, the State has identified significant resiliency needs associated with these sites. As such, these resiliency needs demonstrate housing URN for both Orange County and Rockland County.

Infrastructure URN – Updated: All of the State's 10 Target Areas have permanent public infrastructure (i.e. FEMA Category C to G) that has not yet been repaired due to inadequate resources, and for which no CDBG-DR funding has been identified in an Action Plan. In Phase 1, the State identified and quantified permanent damage that remains unrepaired as a result of inadequate resources (i.e. FEMA PA work in Category C to G) in the counties of Nassau, Suffolk, and Westchester. In Phase 2, the State further identifies and establishes almost $2.2 billion in additional and continuing infrastructure URN as a result of the Qualified Disaster(s) in all 10 of the Target Areas, exceeding the threshold of $400,000 per Target Area outlined in NOFA Appendix G. The State cannot address this continuing infrastructure URN with existing resources, as the current CDBG-DR allocation is fully programmed and insufficient to meet demand as evidenced by FEMA Public Assistance (PA) and FEMA Hazard Mitigation Grant Funding Program (HMGP) data. In both cases, the State demonstrates that both programs are significantly oversubscribed and presents them as evidence of continuing infrastructure URN.

FEMA PA: The FEMA PA Program provides funds for State and local emergency response needs, and also the repair and rebuilding of public infrastructure damaged by a presidentially-declared event. To aid recovery, GOSR instituted the FEMA PA Match Program where CDBG-DR is used to cover required non-federal share, or "local match," for municipalities in the FEMA PA program. As per APA 8, GOSR has committed $508 million to this program. As per APA 11, the State is dedicating $27.5 million of this $508 million to PWs related to the Long Island Power Authority (LIPA). As of this application, the State has identified demand for this program equal to or greater than this commitment. Specifically, the State has identified additional URN from applicants who began a FEMA PA application for permanent damage (i.e. Category C to G), but did not complete the opt-in process to participate in the now fully committed GOSR match program. Without the required match, these projects remain unfunded and constitute infrastructure URN. The State identified over 260 applicants who began the process of opting in, but for various reasons (capacity, administrative time, or staff turnover, etc.), never formally opted-in to the program, despite repeated outreach by the State. In three Target Areas—Nassau, Suffolk, and Westchester— one or more of these demonstrated, in aggregate, permanent damage in excess of the $400,000 threshold. As the State's FEMA PA match program is fully programmed, the State does not have additional CDBG-DR funding sources available to address this URN. As such, these Target Areas meet the threshold identified by in NOFA Appendix G ($400,000 in permanent damage).

HMGP: FEMA provides HMGP funds to states, when authorized under presidentially declared disasters, to boost resiliency, mitigate the risks of loss and damage associated with future disasters, and reduce hardship. The funds require local match, and are currently administered by GOSR and the NYS Department of Homeland Security (DHSES). The State must submit projects to FEMA for approval, and GOSR and DHSES work together to identify and prioritize projects.

When the State announced the HMGP grant cycle, it received almost $6 billion in qualified

applications from 1,200 eligible applicants. The State, however, currently has only roughly $1.43 billion of HMGP funds, which it is currently programming. The State has received almost $2.2 billion in applications from over 700 applicants in the 10 Targets Areas that the State is identifying as unfunded. Because the amount of HMGP funding available is insufficient to support these projects, the State is identifying this as an infrastructure URN. In every Target Area, this URN exceeds the minimum threshold of $400,000 in permanent unfunded infrastructure repair and resiliency need (see Exhibit D).

Exhibit C Capacity
New York State
ExhibitCCapacity_NYS.pdf

New York State (State) has a demonstrated capacity to implement the proposed CDBG-NDR activities. In particular, the Governor's Office of Storm Recovery (GOSR), which is successfully overseeing the State's recovery programs since 2013, is well-positioned to coordinate the implementation of the portfolio of National Disaster Resilience Competition (NDRC) proposals. As demonstrated by GOSR's past and current work, the agency believes that deep engagement of State agencies, public and private partners, and community stakeholders is central to advancing a regional, cross-sectional approach to addressing unmet recovery needs (URN). For each project or program discussed in this application, GOSR has supplemented its own capacity by partnering with public and private organizations that have the acumen and expertise to ensure the successful delivery of the proposed projects and programs. GOSR staff prepared this application, after extensive collaboration with state agencies, eligible county and municipal governments, and other stakeholders.

General Administrative Capacity: GOSR is spearheading the development of this NDRC application and is well-prepared to manage any additional disaster recovery funding received from the U.S. Department of Housing and Urban Development (HUD). In June 2013, GOSR was established by Governor Andrew M. Cuomo to maximize the coordination of federally-funded recovery and resilience efforts in storm-affected areas throughout the State. GOSR manages the State's $4.4 billion allocation of Community Disaster Block Grant – Disaster Recovery (CDBG-DR) funding authorized by the Disaster Relief Appropriations Act, 2013 (Public Law 113-2, approved January 29, 2013), administering a variety of programs relating to housing recovery, economic development, infrastructure, and community reconstruction in disaster-impacted areas. Formed under the auspices of the New York State Housing Trust Fund Corporation (HTFC), a public benefit corporation and subsidiary agency of New York State Homes and Community Renewal (HCR), GOSR has demonstrated proficiency in disbursing CDBG-DR dollars in a timely, compliant manner, and has drawn nearly $1.6 billion as of September 2015.

GOSR has learned from the development and administration of recovery programs and is fully prepared to implement the additional resiliency programs and projects proposed herein, both directly and through partners. GOSR consists of 137 full-time staff, manages an array of contractors, operates financial and procurement management systems that are compliant with all State and federal requirements, and has put in place fully functioning quality assurance, quality control, and internal control systems.

GOSR has established several models for rapid program design and launch, from utilizing contractors and vendors to entering into subrecipient agreements with eligible agency, municipal, and non-profit partners. As of October 2015, GOSR has executed 101 contracts with vendors and 96 subrecipient agreements. In the NDRC and in the State's ongoing recovery efforts, GOSR is prepared to leverage its institutional knowledge and lead the implementation of additional recovery and resiliency projects, developing innovative financing strategies that streamline recovery at the local level and maximize available CDBG-DR funds. The experience of GOSR's program and support teams—and the processes and tools they have developed—will be utilized along with partner resources to implement the proposed CDBG-NDR activities.

While the capacity of GOSR team members is often cross-cutting, the work and experience of specific GOSR programs will serve as a particular asset in the implementation of proposed CDBG-NDR activities. For example, the NY Rising Single Family Homeowner Program involves the closely controlled provision of direct assistance to homeowners for repairing, reconstructing, and increasing the resiliency of storm-impacted homes. As of October 2015, the Program has disbursed $582 million to homeowners—this case management experience will be invaluable in guiding the provision of direct assistance to manufactured home residents through the proposed Manufactured Home Community Resiliency Pilot Program. GOSR's NY Rising Multi-Family Affordable Housing Program is designed to both preserve publicly-assisted affordable housing and other larger rental housing developments and to

create new affordable housing developments. This experience will be directly applied toward the implementation of the proposed Public Housing Resiliency Pilot Project. GOSR's NY Rising Community Reconstruction (NYRCR) Program has extensive community planning and engagement expertise— more than 600 New Yorkers served on the NYRCR's Planning Committees, and the program held more than 650 Planning Committee meetings, as well as 250 larger scale public engagement events— that will be put to work in the planning phase of the proposed Manufactured Home Community Resiliency Pilot Program, as well as experience in making and managing grants for infrastructure projects similar to the proposed Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program. GOSR's Infrastructure team has experience and capacity needed to support the Right-Sizing Bridges Program, Right-Sizing Critical Dams Resiliency Project, and the Nassau County Outfall Pipe and Bay Resiliency Project.

GOSR has integrated outcomes tracking within its project management frameworks and maintains dedicated research and analysis staff to determine and evaluate the impacts of projects and programs. GOSR's staff also has extensive experience in developing the programs described above to meet and exceed various diversity requirements (M/WBE, EEO, Section 3, etc.), as well as in tracking quantitative data to analyze racial and economic disparities. As announced at the State's Fourth Annual M/WBE Forum held in Albany on October 1-2, 2015, GOSR engages more than 70 M/WBE vendors and requires all of its sub-subrecipients to adhere to the State's M/WBE goals. GOSR's support teams—including communications, finance, legal, and policy—have the proven capacity to manage the critical administrative and internal control requirements of large-scale, federally funded recovery and resiliency activities. GOSR's Finance team is responsible for the disbursement of over $4 billion in HUD funds, and is skilled in budgeting, invoice review, and financial controls. The Communications team engages a vast array of stakeholders and is committed to advancing transparency and accountability. GOSR's Policy and Legal teams are experienced with HUD laws, regulations, and rules. GOSR's fully staffed

Procurement and Contract Administration (PCA) team within its legal department is experienced in procuring and managing contractors in compliance with all relevant federal and state regulations. Finally, GOSR's Monitoring and Compliance team works across GOSR programs to ensure that all activity complies with federal and state regulations, and is complemented by an Internal Auditor. All of these functions will support the implementation of CDBG-NDR activities, as they currently do for the State's CDBG-DR award. As required by the Disaster Relief Appropriations Act 2013, the State has submitted and continues to update as needed the Certification of Proficient Controls, Processes, and Procedures to HUD, which certify to the GOSR's ability to properly manage federal funds.

This application has been prepared by GOSR staff, after extensive collaboration with state agencies, eligible county and municipal governments, and other stakeholders.

Technical Capacity: GOSR possesses in-house capacity, through staff and contractors, in many of the areas indicated as critical in the NDRC NOFA and relevant to the State's proposed CDBG-NDR activities. GOSR's NYRCR team includes urban planners, and is experienced with the management of State, city, and regional planning activities. The NYRCR Program's planning phase entailed the development of 66 community resiliency plans through an innovative participatory process. That effort was supported by contributions from the NYS Department of State's (DOS) Office of Planning and Development, which has experience in coastal and riverine planning and has developed models that incorporate rigorous, science-based predictions of the effects of climate change such as sea-level rise.

The NYRCR and Infrastructure teams are also experienced in the management of project design, and with the integration of green infrastructure techniques into planning and development. This experience is best seen through the teams' implementation of NYRCR projects and the State's two Rebuild by Design (RBD) projects, as well as a host of standalone infrastructure projects. The NYRCR and Infrastructure teams also have a range of expertise integrating risk, impact, and vulnerability assessments—particularly those pertaining to sea-level rise and climate change—into planning and project development. These

teams have also relied upon their own experience and the experience of sister agencies like the NYS Dormitory Authority to conduct technical assessments and value engineering. This experience and expertise, complemented by the experience and expertise of Partners that is detailed below, will support *all* of the proposed CDBG-NDR activities.

GOSR's Housing teams have extensive experience in acquisition and disposition of real estate, honed through the design and implementation of the State's Buyout and Acquisition Programs, which have purchased over 838 properties, totaling over $330 million (as of October 2015). These teams, as well as GOSR's Affordable Housing Program, are familiar with accessing operating and investment capital and with leveraged and mixed financing. They are also familiar with the reconstruction of traditional family homes, manufactured housing, and multi-family housing and the Uniform Relocation Act (URA), all of which will be relevant to the implementation of proposed CDBG-NDR activities.

GOSR's Bureau of Environmental Review and Assessment, a cross-cutting legal team, is deeply experienced with issues of floodplain management, pre-development site preparation, remediation of brownfields, and all aspects of environmental review. GOSR is also experienced in performing cost- and price-analyses to determine the cost-reasonableness and cost-benefit ratio of projects and actions in compliance with federal regulations. Both GOSR and its parent agency HCR, have extensive experience working with civil rights and fair housing issues including outreach, technical assistance, data analysis, and HUD reporting to address racial or economic disparities.

The experience discussed above demonstrates that GOSR possesses the overall technical capacity to implement successful recovery and resiliency projects. Below are details of GOSR's experience and the experience of its Partners. These experiences will enable the State to successfully implement the proposed CDBG-NDR activities.

Manufactured Home Community Resiliency Pilot Program: GOSR's NYRCR team is prepared to provide the planning capacity necessary to engage residents of manufactured home communities, and

GOSR's Housing teams are experienced in case management and repair and replacement of manufactured homes. Should a relocation effort involve the development of new housing, GOSR's affordable housing program team also possesses experience in this area. GOSR's Partner in this effort is HCR's NYS Housing Finance Agency's (HFA) Manufactured Home Cooperative Fund Program (MHCFP), a revolving loan program that provides financial and technical resources to facilitate cooperative ownership of and improvements to, manufactured home communities.

Public Housing Resiliency Pilot Project: GOSR's Partners in this project include HCR, the principal agency responsible for funding affordable housing in the State, Enterprise Community Partners, a leading authority on resiliency measures for multi-family affordable housing, Opportunities Long Island, an expert practitioner of workforce development, and the four local public housing authorities (PHA) that will implement the projects and are experienced in using public funds to build and/or manage affordable and public housing. Another partner is Georgica Green Ventures, LLC (GGV), which will act as the developer for one of the properties. GGV has experience as a principal in the development and management of affordable multi-family real estate projects throughout the State, and has worked on all phases of the acquisition, development and operation of affordable housing communities.

Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program: GOSR's Partners in this program are the NYS Department of Environmental Conservation (DEC), The Nature Conservancy (TNC), and Cornell University's NYS Water Resources Institute. DEC employs an experienced staff of environmental scientists and conservation professionals and, through its Water Quality Improvement Project Program (WQIP), which completed its 12th round of funding and has specific experience in making grants to local government to right-size culverts and restore floodplains. TNC and Cornell have experience in on-the-ground assessment, development of prioritization approach, and development of web-based tools for a wide audience.

Right-Sizing Bridges Resiliency Program: GOSR's NYRCR and Infrastructure teams are experienced in making and managing CDBG-DR grants to support infrastructure resiliency. In addition, the NYS Department of Transportation (DOT), GOSR's principal Partner in this effort, is expert in the design and replacement of bridges, and is in the process of replacing hundreds of bridges around the State to increase their resiliency to extreme weather. DOT is prepared to provide executive and staff support to manage all aspects of the program.

Right-Sizing Critical Dams Resiliency Project: The State will partner with the NYS Office of Parks, Recreation, and Historic Preservation (Parks). The dams that will be improved through this project are located in two State parks. Parks is responsible for the maintenance of these assets, and has the resources to manage the capital construction required for this project. Parks manages its own capital projects from inception, planning, environmental review, design, permitting, bidding, budgeting, finance, construction and project close-out. Capital projects are managed through a combination of internal agency staff and term-consultants/contractors that provide project-specific support. The Right-Sizing Critical Dams Resiliency Project would be overseen by Executive Staff for Lead Recovery. In addition, the Palisades Interstate Park Commission (PIPC) will be a Partner on this project, as it operates State parks and historic sites that make up the State's Palisades Region. PIPC operates parks in both New York and New Jersey.

Nassau County Outfall Pipe and Bay Resiliency Project: GOSR's Infrastructure program will leverage experience in implementing large-scale CDBG-DR infrastructure projects, including two major wastewater projects on Long Island, repairs and resiliency improvements to the Bay Park Sewage Treatment Plant in Nassau County, and the extension of sewers through the Suffolk Water Quality Initiative Program. Nassau County, the State's Partner that will implement this project, is fully capable of undertaking a major infrastructure project. The project also benefits from the support of a substantial stakeholder coalition with a range of expertise.

Community Engagement and Inclusiveness: GOSR has significant capacity and experience in community engagement, including a proven record of regional collaboration, community engagement and outreach, coordination with stakeholders on complex projects, and extensive consultation in the development of this NDRC application. Moreover, GOSR is well equipped to facilitate regional collaboration. In order to implement Infrastructure and NYRCR projects, GOSR has entered into subrecipient agreements with local governments and eligible not-for-profits across Long Island, the New York City Metropolitan Area, and Upstate New York. This network of local partners is now well-versed in implementing recovery and resiliency projects using CDBG-DR funds, can be expanded as necessary, and stands ready to assist GOSR and its partners in the implementation of CDBG-NDR activities. In particular, the City and State of New York maintain a critically productive working relationship in the administration of recovery programs. The City is a subrecipient to the State and will work with local NYRCR Planning Committees to implement several projects developed through the NYRCR Program. The State and City also coordinate closely to ensure alignment of the State's Acquisition for Redevelopment program.

The State has placed particular emphasis on community engagement and outreach in its recovery and rebuilding efforts, with a strong focus on those most impacted by past disasters and those most vulnerable to future threats. The New York State Citizen Participation Plan (CPP) seeks to engage the community in particular low- and moderate-income (LMI) individuals, individuals with limited English proficiency (LEP), and the elderly. Moreover, two of GOSR's programs were specifically designed to directly engage community members in storm-impacted localities in their recovery, rebuilding, and resilience: the NYRCR Program, which engaged more than 600 New Yorkers in an intensive participatory planning effort to development and implement nearly $700 million in community-generated recovery and resiliency projects, and the RBD Program, which is engaging Citizens Advisory Committees (CAC) to advise the design and implementation of the State's *Living with the Bay* in Nassau

County and *Living Breakwaters* in Staten Island project. Each CAC has up to 20 members and applications were open to the public. These efforts offer replicable and scalable engagement models that will be used to help achieve the proposed CDBG-NDR activities.

As is described at greater length in Attachment D, building upon the outreach conducted in Phase 1, GOSR sustained and intensified consultation activities with the eligible counties and with the NDRC State Interagency Working Group. GOSR engaged Declared and MID counties, as well as eligible Tribal Areas, to discuss application development strategy, gather new data, and solicit project and programs for consideration. GOSR convened a meeting in Albany with the NDRC State Interagency Working Group to frame this application approach and gather substantial feedback via an online survey. Many of these agencies were instrumental in shaping the projects and programs proposed here.

Management Structure: GOSR's management structure, detailed in the organizational chart at the end of this section, is robust and will enable the successful implementation of recovery and resiliency efforts. No major positions are vacant, and the implementation of the proposed CDBG-NDR activities will not require any additions to key management personnel. GOSR is led by Interim Executive Director Lisa Bova-Hiatt. Ms. Bova-Hiatt previously served as GOSR's General Counsel, on the leadership team assembled by Mayor Michael Bloomberg to address emergency and long- term needs on Staten Island in the aftermath of Superstorm Sandy, as a Legislative Representative in the NYC Office of Legislative Affairs, and as the Deputy Chief of the Tax and Bankruptcy Litigation Division of the NYC Law Department.

GOSR's existing program staff, working in concert with the partners the State has identified in this application, has the capacity and the management expertise to deliver the proposed CDBG-NDR activities. GOSR's Affordable Housing team (led by GOSR's Director of Affordable Housing and under the supervision of the Managing Director of Housing), will manage the implementation of the Public Housing Resiliency Pilot Project. The NYRCR team (led by the Managing Director of the NYRCR

Program) and the Housing team (led by the Managing Director of Housing) will work together to implement the Manufactured Home Community Resiliency Pilot Program. GOSR's Infrastructure and NYRCR teams, led by the Managing Directors of the Infrastructure and NYRCR Programs, will manage grants of funding to two New York state agencies (DOT and Parks), ensuring performance and compliance with all federal and state regulations, as well as subrecipient agreements with local governments an counties in the Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program. Finally, GOSR's Infrastructure team, under the leadership of the Managing Director of the Infrastructure Program, will manage the grant of CDBG-NDR funds to Nassau County, which will manage the Nassau County Outfall Pipe and Bay Resiliency Project.

GOSR's key Partners each possess the management capacity to directly manage proposed CDBG-NDR activities, or to successfully support activity delivery. All Partners are fully aware of the competition requirements, have been deeply involved in proposal design and development, and have an invested interest in their respective programs and projects. Although unlikely, if any Partner fails to act or is untimely, the State has the capacity and adaptability to identify alternative means of implementation.

The Public Housing Resiliency Pilot Project will be implemented by four PHAs. The Hempstead, Binghamton, and Long Beach PHAs are each structured with an Executive Director, who oversees the effort, including coordination with GOSR and government agencies, a Deputy Executive Director, who serves as project manager and oversee architectural design and engineering, project scoping, contracting, and construction management, and a Facilities Engineer, to oversee day-to-day construction activity, with construction management support as needed. The Freeport PHA has entered into a Joint Venture Agreement with GGV, which will secure project financing, engage an architect and engineer, and handle project scoping, contracting and construction management.

The Manufactured Home Community Resiliency Pilot Program will be supported by a partner, the MHCFP. This Partner will provide leverage and technical assistance, and is led by a Vice President for Special Projects. Since its inception in 1988, the MHCFP has developed eighteen manufactured home cooperative communities with 1,287 units with a total development cost of nearly $30 million, with MHCFP mortgages totaling more than $21 million.

The Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program will be led by DEC. Key program leadership will consist of the NYC Watershed and Hurricane Sandy Recovery Coordinator, the Chief of the Procurement, Communication, and Partnership Section of the Division of Water, and a Biologist in the Division of Fish, Wildlife and Marine Resources. DEC will be supported by staff from The Nature Conservancy and Cornell's NYS Water Resources Institute

The Right-Sizing Bridges Program will be led by DOT. Executive and senior management support will be provided the Executive Deputy Commissioner/ Chief Engineer, Chief Financial Officer and Assistant Commissioner, Policy and Planning Division, and the Director, Office of Structures. The Director, Structures Design, will oversee the selected bridge projects. Other senior level staff will be available, as needed, to provide support in key areas determinations.

The Right-Sizing Critical Dams Resiliency Project will be led by Parks, under the leadership of the Director of Operations, who serves as Executive Staff Lead for Recovery. This effort will be supported by a Special Funding Program Manager, staff of Regional and Executive Directors, a team of regional Capital Facilities Managers, central engineering and technical staff, and staff from PIPC.

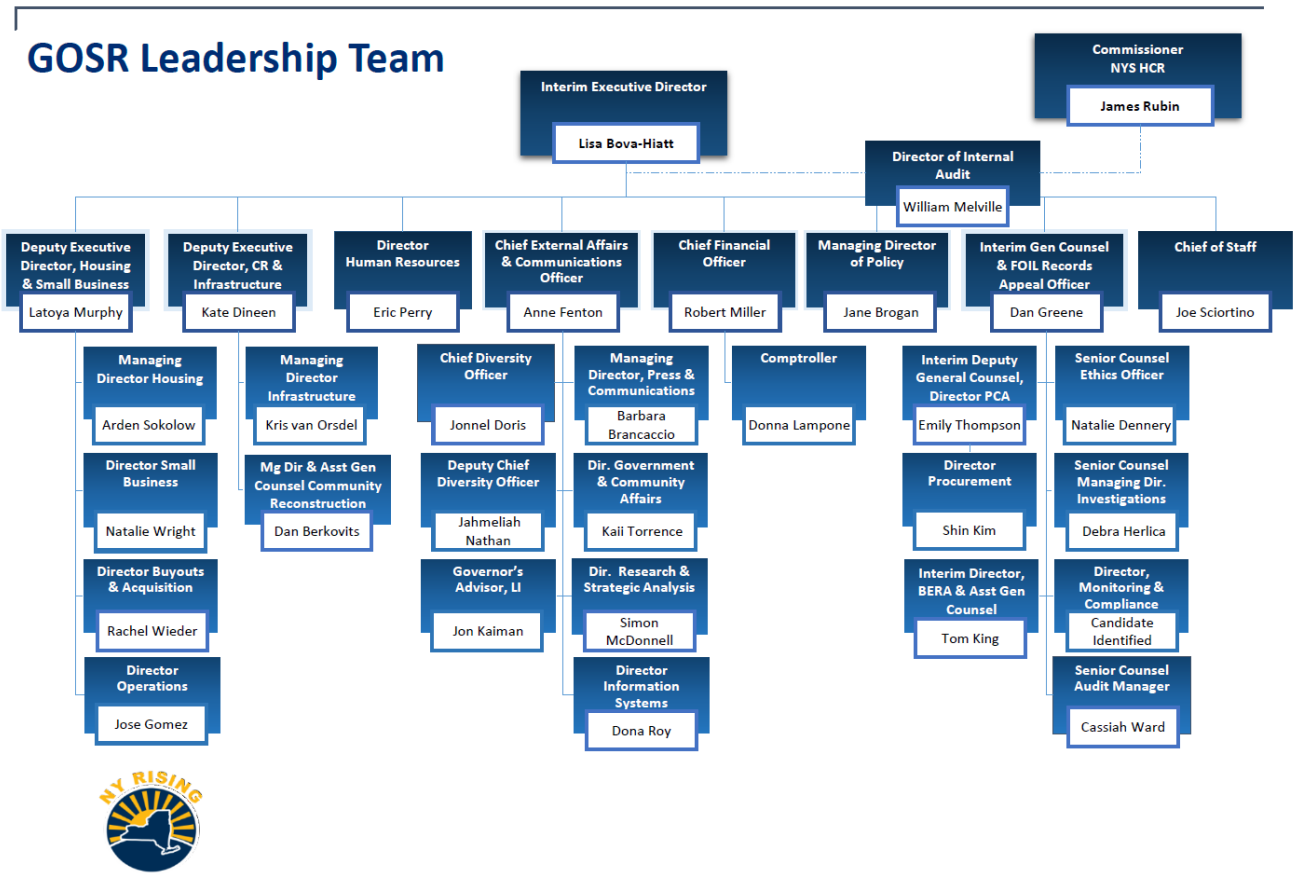
The Nassau County Outfall Pipe and Bay Resiliency Project will be implemented by Nassau County's Department of Public Works (DPW). The Commissioner oversees a staff of 800 employees, is in charge of the design and construction of county buildings, parks and grounds, drains and drainage structures, sewers, sewage disposal plants, water system, and other structures in the nature of public

works. The Chief Deputy of Public Works is responsible for oversight of the Sandy-impacted Bay Park Wastewater Treatment Plant.

References: The State offers two references that speak to GOSR's management capacity and its experience doing work similar to the proposed activities.

1. James S. Rubin, Commissioner of New York State Homes and Community Renewal. james.rubin@nyshcr.org, 212-872-0302, 641 Lexington Avenue New York, NY 10022.

2. Additionally, the State's affordable housing work was highlighted in an article published on *LongIsland.com*: <http://www.longisland.com/news/09-30-15/cuomo-build-affordable-housing-storm-damaged-areas.html>.



Key Partner Management

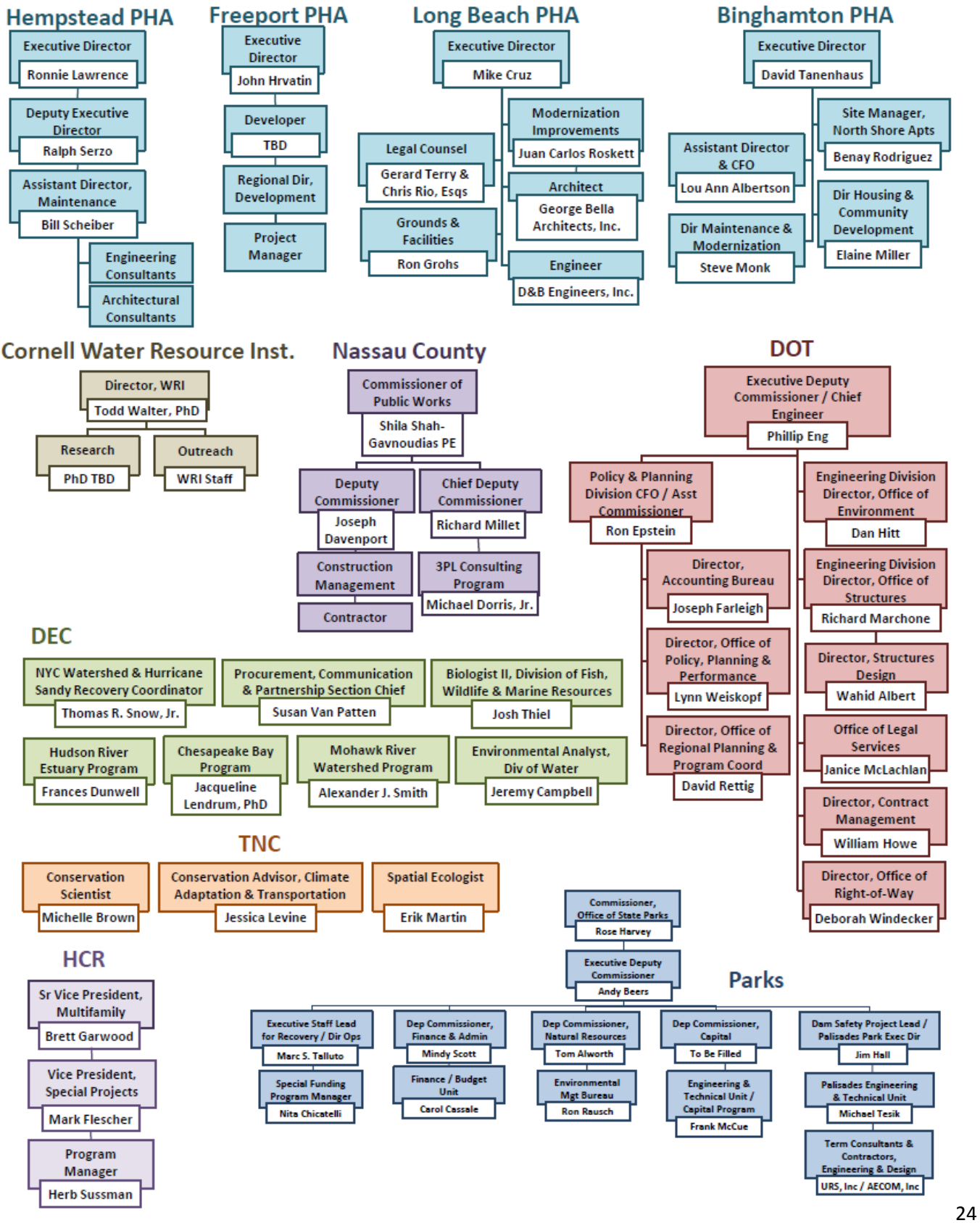


Exhibit D Need
New York State
ExhibitDNeed_NYS.pdf

New York State was granted $4.4 billion in Community Development Block Grant – Disaster Recovery (CDBG-DR) funds to address the unmet recovery and resiliency needs of impacted and distressed communities following the impacts of Hurricane Irene, Tropical Storm Lee, and Superstorm Sandy. The entirety of this funding has been programmed for expenditure under the State's Housing, Infrastructure, Community Reconstruction, and Small Business programs. In fact, the State's programs are vastly oversubscribed, and, as outlined in Action Plan Amendment 8 (APA 8), the State's unmet recovery needs (URN) greatly outweigh its CDBG-DR allocation. In this Exhibit, the State identifies unmet recovery and resiliency needs within the State's 10 Most Impacted and Distressed (MID) counties outside of New York City. These Target Areas comprise 13 percent of the State's landmass, and 26 percent of its population. In addition to these Target Areas, the State's proposed projects and programs have regional implications and the State is committed to working with New York City and New Jersey, as outlined in the Consultation Summary in Attachment D and Partner Letters and Partner Agreements in Attachment A. Moreover, all proposed projects and programs are scalable beyond the Target Areas, and based on the successes of these activities, the State may consider expanding these activities. Leverage funding commitments comprise almost 82 percent of funding requested, and all leveraged funds are discussed in detail in Exhibits E and F. All Target Areas have unmet resiliency needs, as described herein and in Exhibit B. This Exhibit closes by examining demographic information for the Target Areas and by describing appropriate approaches to addressing these URN.

Unmet Recovery Need and Target Geography

The State is identifying the following MID Counties as Target Areas: Broome, Greene, Nassau, Orange, Rockland, Schoharie, Suffolk, Tioga, Ulster, and Westchester. These Target Areas continue to have significant URN in the areas of *Economic Revitalization*, *Housing*, and *Infrastructure*. The State also recognizes Bronx, Kings, New York, Queens, and Richmond as MID-URN counties proposed in NYC's NDRC application (Source 1).

The State is proposing the following projects and programs: *(1) Manufactured Home Community Resiliency Pilot Program; (2) Public Housing Resiliency Pilot Project (four Public Housing Authorities (PHAs), five sites); (3) Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program; (4) Right-Sizing Bridges Resiliency Program; (5) Right-Sizing Critical Dams Resiliency Project (seven sites); (6) Nassau County Outfall Pipe and Bay Resiliency Project (one site).* The table below shows each project or program proposed as part of this NDRC application, with the target geographies, and URN.

County Target Area, Project/Program, and Unmet Recovery Need

County Target Area	Project/Program						URN: Economic Revitalization	URN: Housing	URN: Infrastructure
	1	2	3	4	5	6			
Broome	✓	✓	✓	✓				✓	✓
Greene	✓		✓	✓			✓	✓	✓
Nassau		✓				✓		✓	✓
Orange	✓		✓	✓	✓			✓	✓
Rockland	✓		✓	✓	✓			✓	✓
Schoharie	✓		✓	✓				✓	✓
Suffolk	✓							✓	✓
Tioga	✓		✓	✓				✓	✓
Ulster	✓		✓	✓	✓			✓	✓
Westchester	✓		✓	✓				✓	✓

Each program and project is described separately in Exhibit E and in Attachment F, responding to NOFA Appendix H. All supporting documentation for each Target Area (including MID-URN Summary Checklist A) is submitted as Attachment I. Damage estimates for Low- and Moderate-Income (LMI)

households are from the State's APA 8 (Appendix, Table 3; available at Source 2). Each county below was designated by HUD as a MID area as a result of a Qualified Disaster(s), as outlined in NOFA Appendix B. For NDRC Phase 2, the State designates the entirety of each county as a Target Area. In each case, "remaining URN" reflects unmet recovery need identified *beyond* the State's CDBG-DR programs, which are fully committed.

Target Area: Broome County; Declared Disaster: Lee; URN: Housing, Infrastructure

Housing URN: Over 5,100 owner-occupied (2,400 LMI) units and 1,800 (1,499 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is estimated at $379 million. The State identifies $2.34 million in total housing resilience measures, of which, at least $720,000 of elevation and $60,000 in other mitigation measures is unbudgeted. The State identifies additional URN as a result of its interactions with the Binghamton Housing Authority (BHA): $3.8 million in URN from damages associated with Tropical Storm Lee, impacting 222 BHA housing units with no source of funding identified. The State considers this list of housing units to be a waiting list.

Infrastructure URN: There are HMGP applications for 21 projects worth $4.4 million with no identified source of funding available. All backup data are in Attachment F.

Target Area: Greene County; Declared Disasters: Irene, Sandy; URN: Economic Revitalization (Phase 1), Housing, Infrastructure

Economic Revitalization URN: In the State's Phase 1 NDRC application, the State identified seven businesses in the NY Rising Small Business Recovery Program showing continued unmet recovery need with no source of funding available or indicated. This surpasses the minimum criteria of five businesses. HUD accepted the State's determination of economic revitalization URN for Greene County in Phase 1.

Housing URN: Over 870 owner-occupied (408 LMI) units and 150 (113 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is estimated at $59 million. The State identifies $1.02 million in total housing resilience measures, of which, at least $300,000 of elevation and $70,000 in

other resilience measures is unbudgeted. This Target Area has 23 damaged homes for which the owner has applied to the State for funding of resiliency measures and for which the State has not approved funding. The State considers this list of housing units to be a waiting list.

Infrastructure URN: There are HMGP applications for 14 projects worth $10.2 million with no identified source of funding available. All backup data are in Attachment F.

Target Area: Nassau County; Declared Disasters: Irene, Sandy; URN: Housing, Infrastructure

Housing URN: Over 39,200 owner-occupied (14,400 LMI) units and 10,200 (7,300 LMI) renter-occupied units were damaged in the target area. Remaining URN is estimated at $1.08 billion. The State identifies $523 million in total housing resilience measures, of which, approximately $142 million of elevation, at least $56.7 million of bulkhead repair and replacement, and $15.8 in other mitigation measures is unbudgeted. This Target Area has over 4,000 damaged homes for which the owner has applied to the State for funding of resiliency measures and which the State has not approved funding. The State considers this list of housing units to be a waiting list. The State also identifies additional URN at the Town of Hempstead Housing Authority (TOHHA), Long Beach Housing Authority (LBHA), and Freeport Housing Authority (FHA). In total, the State identifies $7.8 million and $6.6 million in URN at TOHHA's Mill River (104 units) and Inwood Gardens (50 units), and $11.8 million in URN at LBHA's Long Beach Channel (108 units). It also identifies an additional $5.5 million in critical resiliency measures at FHA's Moxey Rigby Homes (100 units). These measures are unfunded. The State considers this list of housing units to be a waiting list.

Infrastructure URN: In Phase 1, the State showed infrastructure URN for this Target Area using a FEMA Project Worksheet associated with the Long Island Power Authority (LIPA) Vegetation Management Program, (PW: PA-02-NY-4085-PW-00367(3)). This URN analysis is updated for Phase 2 with FEMA PA information. The State identifies additional URN from applicants who began a FEMA PA application for permanent damage (i.e. Category C to G), but did not complete the opt-in process to

participate in the now fully committed GOSR match program. Without the required match, these projects remain unfunded and constitute infrastructure URN. In this Target Area, 100 projects representing $5.29 million in permanent damage were submitted by entities that did not opt-in, constituting a URN with no available funding source. All backup data are in Attachment F.

Target Area: Orange County; Declared Disasters: Sandy, Irene, Lee; URN: Housing, Infrastructure

Housing URN: Over 5,100 owner-occupied (2,090 LMI) units and 350 (289 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is estimated at $229 million. The State identifies $495,000 in total housing resilience measures, of which, approximately $120,000 of elevation, at least $65,000 of bulkhead repair and replacement, and $50,000 in other mitigation measures is unbudgeted. This Target Area has 14 damaged homes for which the owner has applied to the State for funding of resiliency measures and which the State has not approved funding. The State considers this list of housing unit to be a waiting list. In addition, as highlighted in Exhibit B, through the a NY Rising Community Reconstruction (NYRCR) Program, the State demonstrates URN for two manufactured home communities, containing 175 homes in this Target Area. Both communities were impacted by a Qualified Disaster and resiliency improvements for both communities were highlighted as "Additional Resiliency Recommendations" in a NYRCR Plan. However, no source of funding has been identified for these resiliency improvements, demonstrating URN.

Infrastructure URN: There are HMGP applications for 78 projects worth $142.9 million with no identified source of funding. All backup data are in Attachment F.

Target Area: Rockland County; Declared Disasters: Irene, Sandy; URN: Housing, Infrastructure

Housing URN: Over 2,100 owner-occupied (795 LMI) units and 1,400 (289 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is estimated at $82 million. The State identifies $6.61 million in total housing resilience measures of which, approximately $1.92 million of elevation, at least

$390,000 of bulkhead repair and replacement, and $140,000 in other mitigation measures is unbudgeted. This Target Area has 49 damaged homes for which the owner has applied to the State for funding of resiliency measures and which the State has not approved funding. The State considers this list of housing units to be a waiting list. In addition, as highlighted in Exhibit B, through the NYRCR program, the State demonstrates URN for one manufactured home community, containing 114 homes in this Target Area. This community was severely impacted by a Qualified Disaster and resiliency improvements for both communities were highlighted as "Additional Resiliency Recommendations" in an NYRCR Plan. However, no source of funding has been identified for these resiliency improvements, demonstrating URN.

Infrastructure URN: There are HMGP applications for 84 projects worth $45.1 million with no identified source of funding. All backup data are in Attachment F.

Target Area: Schoharie County; Declared Disasters: Irene, Lee; URN: Housing, Infrastructure

Housing URN: Over 1,000 owner-occupied (535 LMI) units and 250 (202 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is $56 million. The State identifies $1.25 million in total housing resiliency measures, of which $1.02 million of elevation and $230,000 in other mitigation measures is unbudgeted. The Target Area has 82 damaged homes for which the owner has applied to the State for funding of resiliency measures and which the State has not approved funding. The State considers this list of housing units to be a waiting list.

Infrastructure URN: There are HMGP applications for 22 projects worth $23.2 million with no identified source of funding. All backup data are in Attachment F.

Target Area: Suffolk County; Declared Disasters: Irene, Sandy; URN: Housing, Infrastructure

Housing URN: Over 13,000 owner-occupied (5,617 LMI) units and 1,900 (1,507 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is $35 million. The State identifies $317 million in total housing resiliency measures, of which, approximately $87 million of elevation, $34

million in bulkhead repair and $7.4 million in other mitigation measures is unbudgeted. The Target Area has over 2,000 damaged homes for which the owner has applied to the State for funding of resiliency measures and which the State has not approved funding. The State considers this list of housing units to be a waiting list. In addition, the State identifies one Multi-Family/Affordable Housing (AHF) program funding application that emerged through an RFP and is eligible for CDBG-DR funding, but did not receive the preponderance of funding from other sources required to move the project ahead. This application represents a total of 28 units in this Target Area. The State considers this list of housing units to be a waiting list for the purposes of this competition only.

Infrastructure URN: In Phase 1, the State showed *infrastructure* URN for this Target Area using a FEMA Project Worksheet associated with the LIPA Vegetation Management Program, (PW: PA-02-NY-4085-PW-00367(3)). The State updates its URN for Phase 2 with FEMA PA information. The State identifies additional URN from applicants who began a FEMA PA application for permanent damage (i.e. Category C to G), but did not complete the opt-in process to participate in the now fully committed GOSR match program. Without the required match, these projects remain unfunded and constitute infrastructure URN. In In this Target Area, 82 projects representing $959,000 in permanent damage were submitted by organizations that did not opt-in, demonstrating URN. All backup data are in Attachment F.

Target Area: Tioga County; Declared Disaster: Lee. URN: Housing, Infrastructure

Housing URN: Over 1,900 owner-occupied (408 LMI) units and 500 (113 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is $123 million. The State identifies $2.9 million in total housing resilience measures, of which, $900,000 million of elevation and $60,000 in other mitigation measures is unbudgeted. There are 21 damaged homes for which the owner has applied to the State for funding of resiliency measures and which the State has not approved funding. The State considers this list of housing units to be a waiting list.

Infrastructure URN: HMGP applications for 21 projects worth $20.8 million with no identified source of funding available. All backup data are in Attachment F.

Target Area: Ulster County; Declared Disaster: Irene, Lee, Sandy; URN: Housing, Infrastructure

Housing URN: Over 2,300 owner-occupied (1,014 LMI) units and 300 (254 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is $116 million. The State identifies $489,000 in total housing resilience measures, of which, approximately $120,000 of elevation, $65,000 in bulkhead repair and $120,000 in other mitigation measures is unbudgeted. The Target Area has 15 damaged homes for which the owner has applied to the State for funding of resiliency measures and which the State has not approved funding. The State considers this list of housing units to be a waiting list as a waiting list. In addition, the State identifies two AHF funding applications that emerged through a RFP and are eligible for CDBG-DR funding, but did not receive funding from other sources required to move the project ahead. These two applications represent a total of 98 units in this Target Area. The State considers this list of housing units to be a waiting list. *Infrastructure URN:* There are HMGP applications for 26 projects worth $30.9 million for which it has no identified source of funding. All backup data are in Attachment F.

Target Area: Westchester County; Declared Disasters: Irene, Sandy; URN: Infrastructure *Housing URN:* Over 2,700 owner-occupied (1,013 LMI) units and 250 (178 LMI) renter-occupied units were damaged in the Target Area. Remaining URN is $99 million. The State identifies $695,000 in total resilience measures, of which $180,000 of elevation, $65,000 in bulkhead repair and $60,000 in other mitigation measures is unbudgeted. There are 20 damaged homes for which the owner has applied to the State for funding of resiliency measures and which the State has not approved funding. The State considers this list of housing units to be a waiting list.

Infrastructure URN: In Phase 1, the State demonstrated that Westchester County has incurred almost $4 million dollars in permanent damage with no source of funding identified. The State identifies additional

URN from applicants who began a FEMA PA application for permanent damage (i.e. Category C to G), but did not complete the opt-in process to participate in the now fully committed GOSR match program. Without the required match, these projects remain unfunded and constitute infrastructure URN. In this Target Area, 56 projects representing $1.1 million in permanent damage were submitted by organizations that did not opt-in, well in excess of the threshold required. This represents URN with no available funding. All backup data are in Attachment F. **Target Area: New York City (five counties)** As in Phase 1, the State and NYC closely collaborated to identify and highlight URN for the five MID counties in NYC (Bronx, Kings, New York, Queens, and Richmond). The relevant URN are identified in NYC's Phase 2 NDRC application (Source 3).

Unmet Resilience Needs within Recovery Needs

The State proposes a portfolio of programs and projects to address the recovery and resiliency needs of the Target Areas above. For a detailed analysis on how this portfolio would have limited the impacts of the qualified disasters on the Target Areas, see Attachment F.

Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee caused extensive damage to New York communities. As noted in the State's APA 8 (approved by HUD, April 2015), outside of NYC, an estimated 80,878 owner-occupied homes and 16,943 occupied rental units were impacted. The cost to repair or replace damaged homes outside of NYC, including mitigation needs, was estimated to be $7.20 billion. APA 8 estimated the mitigation needs for businesses with major to severe damage to be $114.8 million, including businesses that incurred physical damage from the storms and businesses negatively impacted by the storms in need of mitigation assistance. Using the HUD allocation methodology, infrastructure unmet need was estimated in APA 8 at $3.04 billion. However, the State has also updated its estimate of true unmet need, and through various new data sources, estimated the infrastructure unmet need to be $13.99 billion.

Using New York State Department of Financial Services (DFS) data, the State estimates that 450,000 Sandy-related insurance claims (276,000 outside of NYC), excluding NFIP, were made within the Target Areas of Nassau, Orange, Rockland, Suffolk, and Westchester, and in NYC. Total loss incurred loss in this downstate region amounted to $5.3 billion—$2.3 billion outside of NYC.

In recognition of the staggering costs of recovering from these three disasters, plus the increased likelihood of extreme weather events occurring more frequently and becoming more costly in the future, the State is committed to investing in long-term resiliency improvements. The proposed programs and projects represent one portion of the State's vision for making its communities more resilient. The State is asking for $469,955,312 in CDBG-NDR funds for all of the programs and projects to invest in the resilience of Target Areas. Had these programs and projects been in place at the time of the qualified disasters, they would have averted significant impacts.

The State identified $16.45 million in damage to public housing in Binghamton, Freeport, Long Beach, and the Town of Hempstead. At least $10.67 million of that damage was to buildings proposed in the State's Public Housing Resiliency Pilot Project. The resilience measures proposed would have averted the majority of this $16 million in damage. Because the projects will be built to at least the 100-year flood standard, accounting for increased sea level rise associated with climate change, the State is ensuring that future hazards are mitigated.

The State has identified $1.6 billion in ecological damage to the Western Bays off the South Shore of Long Island. The proposed Nassau County Outfall Pipe and Bay Resiliency Project would have averted the majority of the $1.6 billion in damage to the 231 acres of salt marsh and 2,173 acres of eelgrass. Because the outfall pipe will be built below the surface of the water (far enough into the ocean that tidal pumps will not be necessary for its function) and the plant it discharges from has a perimeter barrier built above the 500-year flood standard (accounting for increased sea level rise associated with climate change), the State is ensuring that future hazards will likely be mitigated.

Analysis of Investment in Resiliency Needed

If all of the State's proposed programs and projects are implemented, they will prevent approximately $4.8 billion in economic, social, and environmental damages after mitigation over the estimated useful lifetimes of all of the State's proposed programs and projects (for more details, see Attachment F). The New York State Energy Research and Development Authority (NYSERDA) *ClimAID* report (2011), estimated that without adaptation, climate change costs in the State may approach $10 billion annually by mid-century. In the same report, the costs of adaption to these risks and hazards, i.e. the general amount of total investment in resilience necessary to appropriately benefit the State, are estimated at $513 million annually (2010 dollars) (Source 4).

An analysis conducted by the SUNY Rockefeller Institute of Government in conjunction with the State estimates that a nearly $800 million investment in the State's proposed programs and projects—$469.96 million of which would be from CDGB-NDR funds—will produce almost 10,000 jobs per year of program or project implementation. The investment is expected to generate $470 million in income, and a total economic output of $1.427 billion over the implementation period.

Vulnerable Populations

Extreme weather and climate change often disproportionately impact vulnerable populations, including individuals with low- and moderate-income, limited English proficiency, functional needs, the elderly, or the isolated. The State is committed to implementing a comprehensive and community-driven approach to disaster recovery with the goal of making vulnerable populations more resilient to acute shocks, including extreme coastal and riverine flooding events, as well as chronic stresses like climate change, economic instability, and environmental degradation. The projects and programs proposed in this application will enhance the holistic resilience of vulnerable populations and communities in the State's Target Areas—and the State will continue to utilize existing recovery resources to serve and protect vulnerable New Yorkers.

According to the 2010 U.S. Census, there are 5.0 million people and 1.7 million households in the 10 Target Areas outside NYC. Using the American Community Survey (ACS) 2006-2010 (2014) HUD LMI Special Extract, there is a 34.4 percent LMI rate in these 10 Target Areas. In the 10 Target Areas outside of NYC, approximately 75,000 families are below the Federal poverty level.

There has been a marked decline in housing affordability across the State's 10 Target Areas. A 2014 analysis by the New York State Office of the State Comptroller (OSC) highlighted the decline in housing affordability in the State since 2000 (Source 5). In seven out of the 10 MID areas, a majority of renters are paying rents above the "affordability threshold" (housing expenses at 30 percent of household income). In nine out of 10 MID areas, at least a quarter of renters were "severely burdened" (more than 50 percent of household income). Analysis conducted for APA 8 found that LMI households were significantly impacted by the Qualified Disasters. This was particularly true of renters; over 74.5 percent of all impacted rental units were occupied by LMI households and three quarters of rental units with major to severe damage were occupied by LMI households.

The ACS 2009-2013 estimates shows that approximately 10.2 percent of people five years or older in the 10 Target Areas outside of NYC have limited English proficiency. This compares to 8.6 percent nationwide. The 10 Target Areas outside of NYC have significant disabled populations. Approximately 470,000 people are living with disabilities (10 percent) relating to hearing, vision, cognitive difficulty, ambulatory difficulty, self-care difficulty, or independent living difficulty. The 2010 Census shows that the Target Areas also have substantial and growing elderly populations: 710,000 seniors (14.3 percent of the population) live in the 10 Target Areas outside of NYC. This population is increasing as Baby Boomers age.

According to the U.S. Bureau of Labor Statistics, the region is an economic powerhouse for the country. The 10 Target Areas outside of NYC accounted for 2.04 million employees and $111 billion in total annual wages at 171,000 establishments. The population of these 10 Target Areas, especially those

six downstate counties, will continue to grow and age, resulting in more people and assets in vulnerable areas (Source 6). Protecting the region's population and economy against the risks of more frequent storms of greater intensity, sea level rise, and climate change is thus critical to ensuring the economic prosperity of the region and the U.S.

The projects and programs the State proposes in this application will significantly increase the resiliency of the vulnerable populations detailed above. For example, the proposed interventions for public housing and manufactured home residents will increase the resiliency of communities that are typically LMI and otherwise vulnerable. The State has identified at least 45 Public Housing Authority (PHA) buildings in the 100- and 500-year floodplain in the 10 MID counties. There are 32 manufactured home communities in the 100- and 500-year floodplain. The State's approach will better protect these communities from flooding and extreme weather events. The degree to which proposed projects avert harm to LMI and vulnerable populations will inform the selection of projects in the proposed program to right-size bridges and culverts, in addition to floodplains appropriate for restoration. More broadly, the proposed infrastructural right-sizing projects, including proposed critical dam work, would enhance resilience by protecting infrastructure, homes, and communities from flooding along streams and rivers. All of the proposed right-sizing and reinforcement efforts will reduce damage to adjacent and downstream communities. The proposed outfall pipe project will both increase the capacity of the infrastructure to absorb and respond to these events and enhance ecological resilience. The project will reduce, or even reverse, the deterioration of aquatic habitats. Secondary benefits will include additional flood protection for communities. For more, see Attachment F.

Factors that Enhance Resilience

Factors that enhance resilience include the State's commitment to better understand and respond to the effects of climate change. The State's *NYS 2100 Commission*'s efforts inform all policymaking in this area. The State's leadership role in acknowledging the importance of climate change, exemplified by the

signing of the Community Risk and Resiliency Act (CRRA) into law (see Exhibit G), will ensure that future decisions take climate change into account. Further, the State's existing capacity to implement recovery and resiliency improvements to communities as a CDBG-DR grantee—demonstrated by GOSR's ongoing expenditure of funds in compliance with HUD requirements—will also enhance its ability to encourage resilience.

The State's coastal and riverine geography itself inhibits resilience. The State is especially vulnerable to climate change and sea level rise. In addition, the State recognizes the following as potential impediments to resiliency: the lack of resilient housing options for vulnerable populations, the high costs of land and housing in most of the Target Areas, limited public rights of way for facility improvements, aging infrastructure requiring costly maintenance, limited funding availability for resiliency improvements, and the difficulty of coordinating actions across multiple jurisdictions. The State is committed to overcoming these impediments as it continues to plan for resilience. See the NYC NDRC Phase 2 application for additional factors (Source 7).

Appropriate Approaches

The State's Phase 2 application showcases approaches that will simultaneously address the impacts of flooding—the primary effect of climate change on the Target Areas—while also promoting environmental sustainability, social equity, and economic development. This is in-line with the State's Phase 1 application, which highlighted the need to operationalize resiliency and to develop a systematic approach to resiliency by creating solutions to mitigate the physical threat of flooding, while also generating environmental, social, and economic co-benefits. In Phase 2, the State has created two sets of approaches: the first, protecting and enhancing affordable housing, and the second, fortifying critical infrastructure. The State believes that strategy will preserve, protect, and enhance vulnerable communities in the short-, medium-, and long-term.

Given that the damages sustained in the State's Target Areas were closely linked to riverine or coastal geographies, the State has identified that for the Target Areas in particular, and the greater region in general, the best program types to improve disaster recovery and resilience are those which minimize the exposure of communities and public assets to inundation zones during flood or storm surge events. The best eligible activities were identified as those that eliminated inundation risk, followed by those that use some combination of engineered and administrative barriers to provide robust protection from inundation. The State contains 1,480 communities situated in flood-prone areas (Source 8) and places a high priority on moving people and assets out of risk areas or resiliently protecting those communities and assets, whenever appropriate. As a result, the State's approaches mitigate flood risk through the relocation of at-risk communities, improvement of infrastructure to ensure it is appropriate for flood peak flow volumes, construction and retrofit of robust and resilient housing stock, and the strengthening of natural barriers to storm surges.

Ineligible program types include those that do not tie back to the disasters that impacted the State. For example, with climate change, the State will be facing hotter days, but all three disasters were flooding-based; thus, all proposed interventions address coastal or riverine flooding. In addition, a truly resilient approach that addresses all of the State's needs would require more funds than are available through the NDRC. With this in mind, the State has focused on scalable and replicable interventions.

In preparing the portfolio of proposed projects and programs (see Exhibit E), extensive evidence and forecasts were sought to guide reconstruction and resiliency efforts. The State analyzed the 100-year and 500-year flood zones and concluded that a significant amount of the housing stock remained vulnerable. The State also analyzed high volume rainfall runoff into tributaries that feed swollen rivers, concluding that tackling flooding issues systematically—starting upstream—is an appropriate way to protect downstream communities and infrastructure. Analysis of past and projected storm surges allowed the State to identify engineered barriers needed to protect coastal communities now and in the future. The

State also analyzed past and projected disruption to municipal infrastructure during flooding events, allowing the State to identify which risks to community safety and sanitation can be reduced. These logical conclusions allow the State to build upon the systems-based approach to addressing the effects of climate change induced events on riverine and coastal communities described in the State's Phase 1 NDRC application.

Exhibit E Soundness of Approach
State of New York
ExhibitESoundApproach_NYS.pdf

More than 700,000 New Yorkers in 1,480 communities live in designated flood-prone areas (Source 1). Millions more work in, travel through, or enjoy recreation in areas at risk of riverine and coastal flooding or storm surge inundation. New York State's Phase 1 application to the National Disaster Resiliency Competition (NDRC) outlined a systems-based approach to increasing resilience in the State's Most Impacted and Distressed (MID) counties with Unmet Recovery Need (URN), referred to as the State's Target Areas. In this Phase 2 application, the State is proposing concrete steps to protect New Yorkers. These measures align with a systems-based framework of improving physical resiliency through actions that also promote ecological, economic, social well-being.

The State seeks funding to implement two sets of resilience-enhancing disaster recovery interventions. The first set protects and bolsters highly vulnerable low-income communities: the Manufactured Home Community Resiliency Pilot Program and the Public Housing Resiliency Pilot Project. The second set modernizes infrastructure to meet current and future demands in riverine and coastal areas, while improving ecosystem health: Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program; the Right-Sizing Bridges Resiliency Program; the Right-Sizing Critical Dams Resiliency Project, and the Nassau County Outfall and Bay Resiliency Project. Both sets of activities reflect insights from the State's ongoing recovery efforts, targeting system weaknesses and pockets of vulnerability that require additional investment to address unmet needs.

Manufactured Home Community Resiliency Pilot Program

Selection Process: Manufactured home communities (MHCs) provide an affordable housing option for an estimated 71,355 households in nearly 2,000 communities across New York State (Source 2). The majority of these communities were built on low-lying land, often before the advent of land-use regulations. Consequently, many are located in areas vulnerable to natural hazards—such as riverine, coastal, and stormwater flooding—where mitigation would have been required if permitted today (Source 3). A combination of low-incomes, high population densities, and a mix of ownership and rental

structures compounds this vulnerability. The State recognizes the importance of preserving this affordable housing stock.

The State identified MHCs located in the 100- or 500-year floodplain in its Target Areas. A key element in this assessment was the GIS dataset collected annually by NYS Homes and Community Renewal's Division of Housing and Community Renewal (HCR) in accordance with Section 233 of NYS Real Property Law. Analysis of this data identified 40 MHCs in the floodplain, containing 1,686 units and housing 4,384 residents.

The State then engaged with county officials, subject-matter experts, and State agencies to further define the problem and brainstorm solutions (see Attachment D for a list of stakeholders consulted). Through this iterative process, the State further defined the particular vulnerabilities MHCs face during both extreme and routine weather events. Vulnerabilities include socio-economic characteristics of residents, physical liabilities of this housing type, the topographic locations of communities in the floodplain, and inadequate storm and wastewater infrastructure leading to increased risk and cost of recovery. Institutionally, manufactured home owners also face unique financial vulnerabilities. Unlike traditional mortgages, financing for most manufactured homes is similar to automobile financing, with interest rates up to five percentage points higher than the average mortgage (Source 4). Manufactured-housing lenders also specialize in subprime lending, which can increase interest rates by an additional three percentage points (Source 5).

The consensus among stakeholders is that without federal and State intervention, many MHCs will face increasing resiliency needs, jeopardizing valuable affordable housing and putting vulnerable populations at risk. Each community has unique conditions that must be addressed locally, through significant dialogue with key stakeholders and tailored approaches to resiliency. Thoughtful interventions and risk-reduction measures will help these MHCs adapt to future shocks and stresses associated with climate change, as well as socioeconomic challenges.

Program Description: The State proposes the Manufactured Home Community Resiliency Pilot Program (the Program) to substantially increase the social, physical, and economic resilience of select vulnerable MHCs in the following Target Areas: Broome, Greene, Orange, Rockland, Schoharie, Suffolk, Tioga, Ulster, and Westchester Counties. This Program will meet the Low- and Moderate-Income (LMI) National Objective and is a two-step response to effectively address housing URN as well as the distinctive needs of MHCs. The State will select up to four pilot communities to engage in this process, employing a selection criteria that considers: (1) location within a Target Area; (2) location within a 100-year or 500-year floodplain; (3) amount of damage as a result of a Qualifying Storm(s); (4) number of LMI residents; and, (5) proximity to additional storm recovery investments. All threshold criteria will be met through this process (see Exhibit B). Once a list of eligible communities is refined, Step 1 will begin.

Step 1: Community-Based Planning Process: The first step of the Program is a community-based planning process, modeled after GOSR's NY Rising Community Reconstruction (NYRCR) Program. This process, led by GOSR and its Partners, will engage residents of MHCs, along with other relevant stakeholders such as county and municipal officials, non-profit partners, and MHC park owners, in a community-driven resiliency planning and decision-making process. This step is centered on empowering MHC residents, most of whom are LMI individuals. Through participatory planning, the Program will facilitate the exploration of solutions to mitigate the current and future risks of MHCs in the floodplain.

GOSR and its partners will guide communities through the development of community-specific plans. This includes facilitating the convening of community meetings with multiple stakeholders, conducting appropriate research, assisting with public outreach events, and undertaking rigorous analytical work, including the development of a community asset inventory, risk assessment, needs and opportunities assessment, and benefit-cost analysis. At the conclusion, communities will have explored

possible solutions in addressing current and future risk, and arrived at resilient CDBG-DR eligible project plans with multiple options, tailored to the specific needs of the community.

Step 2: Project Implementation: The planning process will drive the development of the best resiliency solution(s) for each participating community. Two likely categories of intervention are the buyout and relocation of an MHC outside of the floodplain, and the upgrading of an MHC through on-site resiliency improvements (green infrastructure, protective measures) and elevation of homes, to the extent safe and feasible. In Attachment F, the State has conducted a benefit-cost analysis of these likely interventions to demonstrate that both are cost-effective. If other solutions emerge in the planning process, the State will perform a benefit-cost analysis on those interventions.

To guide final project selection, additional criteria will be developed to ensure that projects are designed to meet the requirements set forth in the NOFA, including: (1) credible evidence that the project will decrease risk to vulnerable populations; (2) clearly incorporating resiliency; (3) feasible with regard to permitting requirements and pre-development work including design and engineering; and (4) has a reasonable implementation period. All selected projects will align with federal and State guidelines and comply with HUD's CDBG-NDR funding program, including Covered Project requirements, if applicable.

The State will implement proposed solutions directly and/or through subrecipients. As detailed in Exhibit C, GOSR has extensive experience in the implementation of infrastructure and housing resiliency activities both directly and through subrecipients. The State has also identified three partners that will provide leverage financing and technical assistance: the Leviticus Alternative Fund, the Manufactured Home Cooperative Fund Program (MHCFP), and the Community Preservation Corporation (CPC).

Benefit to Vulnerable Populations and Section 3 Opportunities: The State's Program will directly engage and involve residents of MHCs in developing more socially and physically resilient communities. Typically MHCs are comprised of LMI households (Source 6). In 2011, the median annual household

income for Americans living in manufactured housing was $26,000, compared to a national median of $50,054 (Source 7), and about 77 percent of manufactured home households earn less than $50,000 (Source 8). Additional socio-economic vulnerabilities identified in the literature and through stakeholder conversations also include higher proportions of elderly and disabled residents (Source 9) and persons with limited English proficiency. Once specific sites are selected, the State will also explore opportunities to involve Section 3 residents and businesses in project implementation through GOSR's existing Section 3 programs.

Measuring Success: The metrics below identify how the State can holistically measure success throughout the lifespan of the Program.

- *Resiliency Value:* Number of MHC households protected on-site or relocated out of floodplain.
- *Social Value:* Increased percentage of resident-owned MHCs or resident-owned lots in project Target Area; increased number of tenant associations developed in Target Areas; increased levels of community cohesion, as reported by residents, in protected or relocated communities.
- *Environmental Value:* Increased number of EnergyStar rated manufactured homes.
- *Economic Revitalization Value:* Amount of tax-base preserved through protection of MHCs or relocation within community.

Alternatives Considered: The State evaluated multiple options to reimagine resilience in MHCs.

Alternative 1: The "no action" alternative would result in repeated damage to MHCs during storm surge events. LMI families and individuals will lose important assets. A significant amount of affordable housing stock would disappear, resulting in the displacement of residents, many of whom are LMI. Additional local, State, and federal resources will be spent on emergency response.

Alternative 2: This alternative involves the State undertaking a single project within one manufactured home community. This requires honing in on the particular damage of one community without engaging the larger universe of vulnerable MHCs in forward thinking resilience measures. It would force

municipalities to tackle the problem alone rather than utilizing Statewide expertise and leveraging best practices. While this option would allow for the recovery of one community, the State has identified the need for an equitable, multi-community solution with Statewide advocacy efforts to preserve this affordable housing stock. This approach also fails to reap the co-benefit of lessons learned across multiple sites.

Addressing Risks and Increasing Resilience: By focusing on MHCs in the floodplain that were impacted by a Qualified Storm(s), this Program directly responds to the State's housing URN, as well as its identified coastal and riverine risks. In addition, the Program will have a significant impact on social resilience by empowering vulnerable manufactured home residents to transform their own communities. With the expertise of State's Partners, the Program will increase the physical resilience of MHCs through project design and implementation, providing innovative approaches to physical resiliency against flooding and related climate change impacts. Additionally, this Program will decrease the cost spent on municipal resources in the immediate response to flooding.

Model for Other Communities: Due to the increased susceptibility of these communities to natural disasters, specifically riverine, coastal, and stormwater flooding, this Program can serve as a model across the nation as multiple states face a decreasing stock of MHCs. Based on research the State has conducted, there is a need for best practices and innovative solutions for building resilience in MHCs nation-wide. The model of engagement, measurable outcomes, and innovative project designs will offer states and municipalities with a template to address their vulnerable MHCs.

Feasibility: The proposed Program is highly feasible, as it builds off of the successful NYRCR model of participatory resiliency planning, as well as the State's expertise in implementing CDBG-DR projects in a compliant and expedited manner, with guidance from broad network of community leaders, non-profits, and State agencies already committed to supporting and preserving MHCs. The Program and

subsequent projects will utilize the most innovative and sustainable design practices and modeling techniques, while conforming to State and local codes.

The Program is budgeted to assist up to four MHCs, but can be scaled to match available funding and project interventions can be scoped appropriately. Since the Program's projects are not predetermined, the useful life of a project is not yet measurable, but the State will ensure that this criterion is taken into consideration in future project level BCAs.

BCA Summary: The BCR for this Program is 6.6. See Attachment F for more details.

Program Schedule: Manufactured Home Community Resiliency Pilot Program

Task	**Start**	**End**
Step 1 – Community Planning Process		
Solidify Universe of MHCs Eligible for the Program	Jan 2016	Feb 2016
Develop Program Policies and Procedures	Jan 2016	Feb 2016
Engagement/Planning with up to Four Communities*	Apr 2016	Sept 2016
Step 2 – Project Implementation		
Develop Project Concept	Oct 2016	Dec 2016
Establish Resident-Owned Conversion, if applicable	Oct 2016	Dec 2016
Procurement of A/E	Jan 2017	Feb 2017
Design and engineering	Feb 2017	Aug 2017
Environmental Review & Permitting	Mar 2017	Sept 2017
Public bidding	Oct 2017	Dec 2017
Construction	Jan 2018	Nov 2018*

*Milestone: Program benefits realized

Budget: The budget was determined based on the recent experiences of the State in designing programs with similar goals and scope, including the State's current planning, housing, and infrastructure CDBG-DR funded programs. The project concept costs were calculated using current NY Rising Program costs, estimates from other State agencies, and estimates from non-profit partners. The total budget is $70 million and is a combination of these costs for implementation in four communities in NDRC proposed Target Areas. The amount of CDBG-NDR funds requested is $49 million. The amount of leveraged funds is $21 million. For a sources and uses statement, please refer to Attachment B. The cost of operations and maintenance is addressed in Attachments B and F.

National Objective	Eligible Activity	Responsible Entity	Amount of Funds	Proposed Source of Funds
Step 1: Community Driven Planning Process Costs				
N/A	Planning	NYS	$1,000,000	CDBG-NDR
Step 2: Anticipated Project Implementation Costs				
Intervention 1 (in two MHCs)				
LMI	Buyout of Property in Floodplain	NYS	$5,334,823	CDBG-NDR
LMI	Acquisition of Property outside of Floodplain	NYS	$5,334,823	Leviticus - $3,000,000 MHCFP - $2,334,823
LMI	Clearance & Demolition	NYS	$205,185	CDBG-NDR
LMI	Construction of New Housing	NYS	$15,101,652	CDBG-NDR - $11,818,684 MHCFP - $665,177 CPC - $2,617,791

LMI	Relocation Payments and Assistance	NYS	$820,742	CDBG-NDR
Intervention 2 (in two MHCs)				
LMI	Rehabilitation/ Reconstruction of Residential Structures	NYS	$40,740,550	CDBG-NDR - $28,358,341.17 CPC - $12,382,209
LMI	Relocation Payments and Assistance	NYS	$1,436,685	CDBG-NDR

Consistency with Other Planning Documents: This project is consistent with a number of planning documents. The relevant sections of these plans are in Attachment E.

Public Housing Resiliency Pilot Project

Selection Process: Many of the State's smaller storm-impacted Public Housing Authorities (PHAs) have limited resources to assess and address the critical and growing physical resilience needs of housing assets vulnerable to coastal and riverine flooding and the related impacts of climate change, including sea-level rise, increased precipitation, and extreme temperature. Additionally, these PHAs often struggle to meet the economic and social resilience needs of residents who are vulnerable to socioeconomic stressors and environmental shocks. GOSR used the best available FEMA PA data and internal program data to identify PHA-owned facilities sited in the 100-year or 500-year floodplain in Target Areas with housing URN. GOSR then analyzed this subset of properties for a tie-back to the qualified disaster(s), site-specific unmet needs, and geographic and demographic considerations with the goal of serving vulnerable populations and addressing a range of resiliency challenges.

GOSR ultimately identified five properties at four PHAs in two Target Areas—Broome and Nassau counties—which have the highest remaining URN for rental housing, after accounting for assistance provided by GOSR's NY Rising Housing Recovery Programs and other sources. The four PHA Partners are the Freeport Housing Authority, Long Beach Housing Authority, Town of Hempstead Housing Authority, and Binghamton Housing Authority. These Partners identified project sites that sustained damage during Superstorm Sandy, Hurricane Irene, and/or Tropical Storm Lee. Damage included flooding, damage to electrical and mechanical systems, loss of power creating unsafe conditions, and loss of habitability. The five projects selected for this proposal represent different building typologies including low-rise, high-rise, coastal and riverine sites, and senior and family facilities, and are ideal candidates for performance retrofitting and/or new resilient new construction. The new construction project achieves substantial leverage, utilizing HUD's Rental Assistance Demonstration (RAD) Program to access private debt and equity investment in resilient development. GOSR engaged Enterprise

Community Partners, residential construction engineers, building science professionals, developers, and housing finance experts to identify appropriate resilience measures for each site. In consultation with architects and engineers, GOSR crafted site-specific strategies.

The proposed construction of new housing and rehabilitation of existing housing are eligible activities which meet the LMI National Objective. The targeted public housing developments overwhelmingly serve senior and family households with incomes below 50 percent of Area Median Income. At least 51 percent of the units in each building assisted will be occupied by an LMI household. The proposed related workforce development component is an eligible public-service activity with a limited clientele of LMI persons.

Program Description: The initiative has two components: 1) piloting innovative, replicable mitigation and resiliency interventions at select public housing properties, and 2) creating job training and placement workforce development opportunities. It leverages larger State and federal investments, including the $125 million Rebuild by Design (RBD) winning "Living with the Bay" Project along the Mill River in Nassau County, which is adjacent to the proposed Town of Hempstead site. This project's commitment to public housing resilience aligns thematically with New York City's NDRC proposal to protect and connect NYC Housing Authority (NYCHA) facilities in Lower Manhattan.

The State will provide grant funding to five sites in four PHAs to implement site-specific resiliency interventions based on the Enterprise Community Partners' Ready to Respond Toolkit and soon-to-be-released Multifamily Housing Resilience Strategies, including but not limited to: resilient new development (at Freeport Housing Authority); resiliency retrofits to building envelope (at all other sites); nature-based stormwater management features; nature-based coastal protection features; and resilient back-up power/power generation systems.

The proposed construction and site planning techniques include: protection features that reduce vulnerability; adaptation features that respond to changing climate conditions; redundancy features that

maintain critical services during an event, enabling residents to shelter in place in low-level weather events; and social resilience features that facilitate community cohesiveness, increase the quality of life through exposure to natural features and increase economic opportunities through workforce development.

Consulting engineers have evaluated each of the five sites for the suitability of these resilience strategies, which are based on best practices and field research by technical experts and informed by FEMA guidance, technical analysis, and case studies. In addition, the State—through GOSR, in partnership with HCR and the NYS Energy Research and Development Agency (NYSERDA)—will investigate opportunities to increase resilience and further reduce the energy demand of these buildings through smaller scale retrofits such as weatherproofing and lighting upgrades.

GOSR has partnered with Opportunity Long Island (OLI) to implement the second component of the project, workforce development programming. This effort capitalizes on both PHA construction employment opportunities and major infrastructure projects in the State's larger Sandy recovery effort, including new "green collar" jobs through the nearby $125 million RBD Living with the Bay project along the Mill River in Nassau County. Workforce development programming will educate, train, and connect local residents with both traditional and green collar opportunities. A pre-apprenticeship program, offering direct placement into employment with the building trades at project sites, will create a pathway to sustainable, high-wage employment in construction trades and the emerging restoration economy.

Benefit to Vulnerable Populations and Section 3 Opportunities: The project will enhance the physical, economic, social, and environmental resilience of PHA properties and residents. Benefits include protection of scarce public housing assets for low-income renters; improved safety of low-income residents during emergencies; lower, more sustainable energy costs for tenants and housing

operators; extending the useful life of affordable housing; and avoiding of life-threatening power outages and hazardous evacuations of elderly and frail tenants.

GOSR has developed a comprehensive Section 3 Program that this Project will utilize.

The previously-mentioned workforce development component of this project will create targeted employment and training opportunity for residents of public housing. OLI will train approximately 20 people (with potential expansion). Trainees will be LMI residents of the three participating Long Island PHAs.

Measuring Success: PHAs will utilize WegoWise or Energy Score Card to benchmark, track, and analyze their energy and water usage. GOSR will facilitate consultations with NYSERDA's Multifamily Performance Program to inform the effort. GOSR will obtain data on power loss during storm events from utility companies, resistance to flood damage during storms, and other information on building performance at each site. Specifically, the following will be tracked:

- *Resiliency Value:* Power continuity during storm events; number of days to return to full operations following extreme weather events.
- *Environmental Value:* Energy use and cost reduction; reduced water usage.
- *Social Value:* Increased safety and security; decreased mental and emotional stress; and increased social cohesion gauged via survey; increased access to natural features.
- *Economic Revitalization Value:* Number of workforce development program participants enrolled; completion, placement, and post-placement retention percentage for enrolled participants; annual earnings by workforce development program participants.

Alternatives Considered: Repair of existing property without added resiliency measures would not protect against future storms, increase access to life-saving backup power systems during emergencies, or reduce energy requirements. Professionals who assessed each site rejected numerous measures not proposed here as infeasible, not cost-effective, or too risky.

Model for Other Communities: This demonstration project will show the added benefits and costs of incorporating resiliency features in various building types subject to different severe weather hazards. GOSR will collaborate with Enterprise to share results and learning with developers and policy-makers. Lessons learned will inform State underwriting policy for public housing capital improvements, Mitchell-Lama refinancing, and new affordable housing development, including a new State effort to develop financing vehicles to support public housing conversions in the HUD RAD Program.

The demonstration will also inform deep energy retrofit and resiliency strategies to be funded in the coming years under the State's Reforming the Energy Vision (REV) initiative. Under REV, the State has proposed to allocate $5 billion to promote energy initiatives through the Clean Energy Fund. After a comprehensive stakeholder engagement process, the proposal is currently pending approval by the Public Services Commission.

Feasibility: The resilient retrofit and new construction techniques chosen for this pilot reflect Enterprise's knowledge of best practice and field research by technical experts around the country. Some of the flood-proofing measures, are drawn from FEMA guidance and are supported by FEMA technical reviews.

The site strategies were carefully considered to holistically and efficiently address the needs of each individual site. All proposed activities will protect properties and contents at the 100-year flood protection level and provide a buffer against severe weather events due to climate change. Mechanical equipment will have a life cycle of 20-to-30 years, and project engineers anticipate an average 60-year useful life of the properties as a whole. The project could be scaled down by eliminating sites, measures undertaken at a given site, or pursuing value engineering.

BCA Summary: The BCA found a BCR of 1.8 low SLR forecast; 2.9 high SLR forecast for the project. For the workforce component, the BCA identified benefits from employment in the trades, including a normal progression through the skilled trades.

Project Schedule: Public Housing Resiliency Pilot Project

Task	**Start**	**End**
NDRC Awards Announced; GOSR announces projects to PHAs; PHAs commence outreach for workforce development	Jan 2016	Jan 2016
NEPA Environmental review commences; follow up letters issued to housing authorities; procurement of A/E as needed	Feb 2016	Apr 2016
Grant awards finalized with HUD; Scopes finalized on all NDRC PHA projects	Mar 2016	Apr 2016
GOSR - PHA agreements finalized	Apr 2016	May 2016
Workforce training program commences	May 2016	Jun 2016
Construction documents complete for rehab projects	Jun 2016	Jul 2016
Construction permits pulled	Jul 2016	Jul 2016
Construction commences on first projects (Binghamton); workforce training program completes	Aug 2016	Apr 2017
Closing on financing for Freeport PHA; construction for all projects has begun	Sept 2016	Sept 2016
Construction substantially complete for all rehab projects; construction 50 percent complete- Freeport PHA New Construction	Sept 2017	Sept 2017

All NDRC funds drawn down (if Freeport PHA not complete, all NDRC funds will have been spent, but subject to default provisions if compliance benchmarks are not met by completion of construction)	Jan 2018	Jan 2018
Disseminate "best practices" document, including lessons learned	Feb 2018	Apr 2018
Freeport PHA residents move in	Sept 2018	Oct 2018*

*Milestone: Program benefits realized

GOSR's program experience with conducting Environmental Review for its Affordable Housing Fund demonstrates that NEPA can be completed concurrent with other pre-construction due diligence. For the Multi-Family/Affordable Housing program, once GOSR issues a conditional award letter, the State begins the process and issues a letter to the applicant, indicating all the items needed to complete environmental review. Depending on the applicant's responsiveness, it takes two to four months (including the mandatory 32-day comment period) for HUD to issue the Authority to Use Grant Funds (ATUGF) which signals completion of environmental review.

Budget: The total budget is $78.04 million. The State is requesting $35.8 million in CDBG-NDR, is contributing $10.26 million in CDGB-DR, and there are $31.99 million in leveraged funds. The budget was developed using cost estimates from engineers and Project Worksheets prepared by FEMA. Engineers supplemented FEMA damage assessments with mitigation measures identified in the Enterprise Multifamily Resilience Strategies and industry standard resilience measures. For a sources and uses statement, please refer to Attachment B. The cost of operations and maintenance is addressed in Attachments B and F.

National Objective	**Eligible Activity**	**Responsible Entity**	**Amount of Funds**	**Proposed Source of Funds**

LMI	Construction of New Housing	Freeport Housing Authority	$42.7 million	CDBG-DR ($9.0m), CDBG-NDR ($5.5m), FEMA PA ($5.8m), Debt ($2.7m), Equity ($16m), Deferred Fee ($3.7m)
LMI	Rehabilitation of Residential Structures	Town of Hempstead Housing Authority	$16.4 million	CDBG-DR ($0.5m), CDBG-NDR ($14.4m), FEMA PA ($1.5m)
LMI	Rehabilitation of Residential Structures	Long Beach Housing Authority	$12.2 million	CDBG-DR ($0.1m), CDBG-NDR ($11.8m), FEMA PA ($0.3m)
LMI	Rehabilitation of Residential Structures	Binghamton Housing Authority	$6.6 million	CDBG-DR ($0.7m), CDBG-NDR ($3.9m), FEMA PA ($2.0)
LMI Public Services	Econ. Development or Recovery Activity that Creates/Retains jobs	Opportunity Long Island	$.16 million	CDBG-NDR

Consistency with Other Planning Documents: This Program initiative is consistent with a number of planning documents. The relevant sections of these plans are in Attachment E.

Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program

Selection Process: The State contains more than 52,000 miles of rivers and streams—and 1,480 communities designated as flood-prone areas (Source 10). Addressing this risk head-on, the State has invested significantly into researching the effects of climate change on precipitation patterns, including projected increases of future rainfall events. Findings agree that extreme rainfall events are becoming more frequent and more severe, worsening both the risk and impact of flooding. In examining possible forward-looking initiatives that address the causes of flooding in riverine communities, the State consulted experts from the New York State Department of Environmental Conservation (DEC). The agency identified the importance of restoring natural floodplains and enhancing—or "right-sizing"—undersized culverts no longer capable of handling the increased volume of rivers and streams. A culvert is essentially a tunnel that enables a stream or open drain to run under a road or railroad. County officials and communities in GOSR's NYRCR Program also noted the importance of these projects to improving community resilience against floods.

Program Description: The State proposes the Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program to facilitate the right-sizing of small-scale infrastructure (culverts with up to a 25 foot span) and the restoration of natural floodplains within the following Upstate Target Areas: Broome, Greene, Orange, Rockland, Schoharie, Tioga, Ulster, and Westchester Counties. The Program will replace defective or insufficiently sized culverts with new structures with the capacity to handle up to 1 in 500 year flood events. The Program will require a 15 percent local match. DEC's current Water Quality Improvement Program (WQIP) requires a local match, and the proposed Program's match maximizes the resilience impact of the NDRC investment. DEC has secured funding commitments for this Program from existing DEC Basin Programs and the Catskill Watershed Corporation (CWC), which will defray the local match requirement in some instances.

Municipalities and counties planning to undertake this work will submit an application to DEC's WQIP grant program through the State's annual Consolidated Funding Application (CFA). The

application will be similar to DEC's current WQIP grant program but will include additional criteria responsive to CDBG-NDR requirements, such as: (1) the project's connection to a Qualified Disaster(s); (2) how the project will be responsive to the URN in housing and/or infrastructure; (3) LMI community and vulnerable populations served by the project; (4) flow capacity; (5) downstream impacts; (6) BCA analysis; and (7) aquatic organism passage.

Any activity selected through this Program will undergo a BCA similar to the one completed in Attachment F. The BCAs for the specific projects funded under this Program are expected to have similar results to the BCA completed for this application, including for capital costs and operations and maintenance. Benefits include aversion of functional losses to critical infrastructure, avoided environmental damages, enhanced water quality, avoided injury/fatality, avoided mental stress/anxiety, and avoided disruption of the local economic activity. All projects funded by the grant will have a BCA greater than 1.

The proposed Program will be implemented jointly by GOSR and DEC. The technical reviews and evaluations of eligible applications will be conducted by DEC, while the contractual/administrative elements will be overseen by GOSR. GOSR will enter into subrecipient agreements with local municipalities and counties awarded the CDBG-NDR funds. Additional partners, an academic institution and a non-profit, will provide technical support to DEC. Partner agreements for DEC and these partners are in Attachment A.

This Program is expected to meet the LMI National Objective through the prioritization of LMI communities and service areas during the selection process. If not LMI, these proposals will meet the Urgent Need National Objective. Projects funded through this Program will have been directly impacted by Superstorm Sandy, Hurricane Irene, or Tropical Storm Lee. Threshold Criteria will be met through the grant application process. It is not anticipated that any project funded through the Program will be a Covered Project. However, if a project triggers Covered Project requirements, the State will ensure that

all requirements are met.

Benefit to Vulnerable Populations and Section 3 Opportunities: In its selection process, benefit to LMI communities and residents is one of the considerations that will be prioritized, and there will be a goal of 50 percent of the funds being spent in LMI service areas. Once projects are selected, the State will seek out Section 3 opportunities to utilize the capacity of eligible local residents and business.

Measuring Success: The primary objectives of this Program are to address the riverine flooding risk faced by communities in Upstate New York and respond to the URN in housing and URN in infrastructure. The State will examine the following metrics, which are closely tied to protecting housing and infrastructure and making communities less vulnerable.

- *Resiliency Value:* Increased flood capacity of culverts, capacity above 100 year storms; reduction in floodwater surface elevation for 10, 50, 100, and 500 year storm events.
- *Environmental Value:* Improved aquatic organism passage; length of stream mile available; reduction in land erosion for 10 year, 50 year, 100 year and 500 year storm events; increased linear distance of stream banks to dissipate stream energy and decrease erosion.
- *Social Value:* Reduced risk to community centers/zones of population density; reduced risk of harm to persons and property; and reduced damage to homes and businesses.
- *Economic Revitalization Value:* Avoided culvert and road maintenance costs; avoided road closures; avoided damage to private property and businesses.

Through its WQIP, DEC currently tracks and monitors WQIP grantees for both right-sizing projects and floodplain restoration projects. DEC has the ability to track and monitor additional metrics as required by this Program, in addition to periodically evaluating program outcomes. Anticipated partners will also track and monitor metrics.

Alternatives Considered: One alternative considered was addressing needed right-sizing and floodplain restoration through projects pre-identified by DEC. Because the proposed grant-making

program builds resiliency awareness and capacity at a local level, the State believes this to be an optimal approach.

Addressing Risks and Increasing Resilience: As a result of climate change, several 100+ year storm events can be expected annually within the State's Upstate Target Areas (Source 11). Cornell University's culvert assessments and capacity modeling in the State's Upstate Target Areas has shown that over 50 percent of culverts in 15 municipalities are incapable of passing greater than a five year storm interval (Source 12). The right-sizing of culverts, coupled with floodplain restoration, will be highly effective in reducing flooding damage. Removing historic fill and berms from the 100-year floodplain and reconnecting streams to natural floodplains allows for the spreading of water over a large area, diminishing water flow velocities and significantly reducing floodwater elevations in the immediate area and downstream. Creating wetlands within restored floodplains has the cross-cutting benefits of improving water quality and providing habitats for fish and wildlife species.

Models for Other Communities: Flooding exacerbated by under-sized infrastructure and constricted floodplains is not a challenge unique to the State. The proposed Program presents a highly scalable solution for riverine communities across the United States. For communities from Maine to Virginia, the North Atlantic Aquatic Connectivity Collaborative (NAACC) has developed a comprehensive database and assessment protocol that calculates flow capacity and aquatic organism passability, enabling users to assess culverts and thereby allowing other communities to do their own assessments. With this information, other states could develop a similar grant program.

Feasibility: The proposed Program is highly feasible, as it builds off work currently undertaken by DEC and its partners in assessing, prioritizing, and right-sizing infrastructure. In addition, the design standards proposed in this program are well-accepted as best practices in the field: current design guidelines are turning to geomorphic principles to both naturalize stream crossings and make them less prone to flood damages (Source 13) (Source 14). The primary principle behind the geomorphic-

engineering design approach is to optimize structure size and shape so that the river channel form and processes can be accommodated. Structures that are sized at the bankfull channel width or larger are (1) able to convey more water, sediment, debris, and ice; (2) less prone to clogging; (3) less prone to scour; (4) more compatible with a stable channel; and (4) able to pass fish and wildlife.

Culvert replacements are generally designed with a life-span of up to 75 years and floodplain restoration projects can have an even longer life-span. If these floodplain restoration areas are protected by an easement or covenant, the community benefit(s) of these projects can last in perpetuity. If structures are sized appropriately to incorporate climate change projections, communities will be able to achieve a tremendously high level of flood resiliency well into 2100.

In keeping with normal local government and county responsibilities, operations and maintenance will be provided by the local jurisdiction or county that owns the culvert or land. In addition, right-sized culverts have been shown to have significantly lower maintenance costs over a 50-year timeframe (22-26 percent less than undersized round culverts) (Source 15).

This Program can be scaled or scoped by: (1) decreasing the number of projects across the Target Areas; (2) focusing on a specific project type (right-sizing culverts, natural floodplain restoration); or (3) focusing on sub-watersheds that chronically flood within the HUD-targeted counties.

BCA Summary: The BCA for this program is 3.6 See Attachment F for more detail.

Program Schedule: It is anticipated that this Program will have five funding rounds. The Program is structured with multiple funding rounds in order to build on the prioritization work undertaken by Partner, The Nature Conservancy (TNC) as well as the assessment work undertaken by Cornell University's Water Resources Institute (WRI). See Attachment A for partner documentation outlining the proposed scope of work for each entity. Moreover, additional rounds will provide evidence to local governments about the beneficial impacts these projects have, potentially encouraging additional local governments to apply to the Program. The one year milestones for right-sizing projects and restoration

projects are below; additional rounds are expected to follow the same time schedule, and all five rounds are outlined in Attachment F. The right-sizing milestones are based on conducting additional assessments. However, this process could be shortened by prioritizing projects that are already assessed by DEC. Based on DEC's current assessments, approximately 150 undersized culverts have been identified as a priority for upgrading.

Program Schedule: Right-Sizing Culverts

Task	**Start**	**End**
Conduct additional culvert assessments in Target Areas (125 sub-watersheds/13,000+ structures)	Feb 2016	Feb 2017
Evaluate existing assessed culverts in Target Areas and identify highest priority culvert replacement	Feb 2016	May 2016
Issue WQIP grant program for initial round of assessed culverts through CFA	May 2016	Jul 2016
Award Grants	Aug 2016	Oct 2016
Submission of permit applications (can be performed at different times; SEQR and NEPA review occur)	Oct 2016	Jul 2017
Complete contracts (contracts can be executed prior to final permits issued; municipality/county grantees do their own procurement in this phase)	Oct 2016	Jan 2017
Construction	Jul 2017	Sept 2017
Completion of First Round of Projects, Reimbursement and Contract Closeout*	Sept 2017	Nov 2017

Program Schedule: Restoring Natura Floodplains

Task	Start	End
Issue WQIP grant program for Natural Floodplain Restoration program through CFA	May 2016	Jul 2016
Award Grants (grant reviews/scoring/notification)	Aug 2016	Oct 2016
Submission of permit applications (can be submitted at different times; SEQR and NEPA review occur)	Oct 2016	Apr 2017
Complete contracts (municipality/county grantees do their own procurement in this phase)	Aug 2016	Nov 2016
Construction	Nov 2016	Feb 2017
Completion of First Round of Projects, Reimbursement and Contract Closeout*	Feb 2017	Apr 2017

*Milestone: Program benefits realized

Budget: The budget was determined by looking at DEC's current work. The average price of a culvert replacement project in the WQIP was $145,000. Estimates for floodplain reclamation work were determined by examining similar work currently being undertaken within the Mohawk Valley region of the State. The cost of restoring an acre of wetland ($5,500) is based on Upper Susquehanna Coalition figures. For a sources and uses statement, see Attachment B. The cost of operations and maintenance is addressed in Attachments B and F.

National Objective	Eligible Activity	Responsible Entity	Amount of Funds	Proposed Source of Funds
LMI/Urgent Need (Goal of 50% of funds	Public Facilities and Improvements	NYS	$106 million	CDBG-NDR $90 million; DEC Basin Program and CWC $7.9

being spent in LMI service areas)				million; Local funds $7.9 million; $.6 million CDBG-DR

Consistency with Other Planning Documents: This Program initiative is consistent with a number of planning documents. The relevant sections of these plans are in Attachment E.

Right-Sizing Bridges Resiliency Program

Selection Process: Since 2011, approximately 500 bridges in the State have been damaged, destroyed, or temporarily closed due to flooding in extreme weather events, including Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. Research shows that extreme precipitation will increase in magnitude and frequency throughout this century. The State, with its partner, the NYS Department of Transportation (DOT), proposes to right-size flood prone bridges in the following Upstate Target Areas. The Right-Sizing Bridges Resiliency Program will build on the successful work being undertaken in DOT's Scour Critical/ Flood Prone Bridge Program, which is improving 105 bridges to make them more resilient to scour through funds provided by FEMA's Hazard Mitigation Program (HMGP). This program addresses bridge scour, which is the erosion of sediment from around bridge abutments or piers, caused by swiftly moving water, the compromised a bridge's structural integrity. DOT is managing this work in addition to its $1.8 billion per year capital construction program, and will deliver any additional bridge projects funded under this application.

Under the proposed Program, the candidate bridges for improvements will be determined through outreach to local DOT resident engineers knowledgeable about the flooding history of each bridge. Once a bridge candidate is vetted and selected, an engineering analysis will be performed and a design developed to ensure long-term resiliency. Environmental and project processes will drive extensive

outreach to affected local communities, elected officials, community officials, businesses, and residents including LMI and LEP populations.

Program Description: The State will right-size up to 30 scour-critical and flood-prone bridges in the following Target Areas: Broome, Greene, Orange, Rockland, Schoharie, Tioga, Ulster, and Westchester Counties. Bridges will be sized to ensure that future stream flows are adequately addressed by comparing designs based on current stream flows with those developed for future time slices through the StreamStats tool. Right-sizing bridges averts flooding, improves water quality due to decreased erosion, improves access for emergency responders, improves local economies due to less uncertainty from flooding, and improves fish and wildlife habitat.

To be selected for this Program, the structure must have sustained damage during Superstorm Sandy, Hurricane Irene, or Tropical Storm Lee and be evaluated under the following initial selection criteria: (1) project cost (right-of-way (ROW), engineering, construction, and construction inspection (CI)); (2) annual maintenance costs for the proposed bridge; (3) annual average daily traffic counts on the bridge; (4) detour distance and time should the bridge be unavailable; (5) emergency replacement costs (ROW, preliminary engineering, CI, construction); (6) duration of emergency bridge closure due to extreme event (design and construction time); and (7) normal construction duration.

The Program—including technical reviews, evaluations of eligible bridges, and work on bridges—will be administered by DOT, which will enter into an MOU with GOSR for funding. GOSR will provide technical assistance and ensure compliance with all HUD and other federal regulations.

This Program is expected to meet the LMI National Objective through the prioritization of LMI communities and service areas during the selection process. If not LMI, these proposals will meet the Urgent Need National Objective. Threshold Criteria will be met in the selection process. It is not anticipated that any project funded through this Program would be a Covered Project. If any are, the State will ensure that all Covered Project requirements are met.

Benefit to Vulnerable Populations and Section 3 Opportunities: This Program will prioritize LMI communities and service areas during the selection process. Work stemming from this Program may present opportunities to hire Section 3 residents and businesses. While bridge work requires highly specialized labor, DOT will work with the contracting community to identify opportunities and provide training to Section 3 residents to the greatest extent possible. These efforts will include, but will not be limited to DOT's extensive outreach to women and minority owned businesses.

Measuring Success: DOT will provide periodic progress assessments and can provide data for all proposed metrics through its data systems and other available data sources. Additional data can be obtained from the detailed bridge analysis that will be undertaken for each bridge to be improved. The following criteria will be used to measure each project and the Program:

- *Resiliency Value:* Average annual daily traffic (AADT) on more resilient bridges; reduction of Base Flood Elevations; access to critical emergency services, schools and other functions preserved; value or area of avoided flood damages to housing and businesses.
- *Environmental Value:* Improved fish and wildlife passage; habitat improvements; linear feet of stabilized stream banks as a result of right-sizing.
- *Social Value:* Number of LMI residents within 1/2 mile distance of bridge; number of LEP residents within 1/2 mile distance of bridge; avoided health impacts.
- *Economic Revitalization Value:* Number of businesses within 1/2 mile of bridge; improved attractiveness to businesses within 1/2 mile of bridge; improved eco-tourism (fishing, wildlife viewing, access).

Alternatives Considered: The State considered a "no action" alternative. This alternative would be to continue to monitor the bridges per DOT's Bridge Safety Assurance Program, and to provide maintenance and emergency improvements, as necessary. Right-sizing bridges to enable these structures

to withstand more frequent and intense storm events is more a more effective strategy and will decrease physical and psychological stress to the populations that depend on this infrastructure.

Addressing Risks and Increasing Resilience: The State has demonstrated URN in housing and infrastructure and has identified clear risks in riverine flooding, some of which are caused by inadequately-sized in-stream infrastructure, that are expected to worsen with climate change. In addition to the declared disasters, other severe storms have also caused hardships. The frequency of these flooding events highlights the State's need to right-size bridges. This Program increases resilience through:

- *Improved Safety and Mobility:* Right-sized bridges allow more water to pass during high flows and are less likely to sustain damage from large storms. When bridges fail, the road is also frequently damaged and can be closed for many days. This can isolate households and prevent emergency services from reaching people in need of help. Road closures also cause travel delays, loss of tourism revenue, lost income for local businesses, and lost income for residents who cannot access their places of employment.
- *Avoided Costs:* Flood damage to private property can be avoided with road-stream crossings capable of passing high water flows. Additionally, physical and mental health impacts associated with flooding and the disruption of everyday life can be reduced through avoided flooding.
- *Reduce Upstream Base Flood Elevations:* Increased resilience in Target Areas can be demonstrated by modeling new BFE.

Models for Other Communities: The method of evaluating flood-prone or scour critical bridge impacts on local communities can be undertaken by entities in other states. The Program criteria can also be applied to local infrastructure. This Program is scalable and bridges can addressed as funding becomes available.

Feasibility: The proposed Program is feasible as it builds on DOT's experience with the Flood Prone, Scour Critical Bridge program. Each bridge is expected to have a useful life of 75 years. Each project

will meet or exceed industry standards. Current DOT guidelines require bridges to pass the 50-year flood plus two feet of freeboard. The designs under this application will be checked for climate informed 100-year future floods obtained through HEC-RAS and the future StreamStats tool, which is based on climate models to ensure that bridges can accommodate future 100-year flows. After right-sizing, annual maintenance costs for each bridge are estimated to be, on average, $6,300. This Program can be scaled based on the availability of funds. If fewer funds are available, work on the highest priority bridges will be undertaken first.

BCA Summary: The BCR for this Program is 3.4. See Attachment F for more detail.

Program Schedule: The Right-Sizing Bridges Resiliency Program is expected to fund up to 30 bridge projects, each of which will require a detailed engineering assessment, all of which will be required to complete environmental determinations, and some which may require right-of-way acquisition. The State understands that these projects will need to follow the HUD NEPA process, which may require processes beyond those DOT has already established with the Federal Highway Administration. Further, it is the State's understanding that the deadlines include both project construction, and expenditure of all funds. This requires time for billing, processing, etc. The proposed schedule is the best estimate of the time it will take to complete these processes. DOT will be working through all projects and all processes as expeditiously as possible, and the State expects that many if not most projects will be completed before the proposed end dates.

Program Schedule: Right-Sizing Bridges Resiliency Program

Task	**Start***	**End****
Selection of Projects	January 2016	January 2016

Preliminary Engineering/Environmental Determinations	January 2016	June 2017
Final Design	January 2017	June 2018
Award Projects	June 2017	December 2018
Construction (Complete/Fully Expended)**	July 2017	December 2020

*It is understood that some tasks will overlap with others as individual projects are progressed.

** Milestone: Project benefits realized

Budget and Leveraged Funds: DOT uses industry standards in design and construction. DOT may use design-build delivery as well as the more traditional design-bid-build to ensure that projects meet the necessary schedules, and employ the most efficient techniques. Quality assurance/quality control is a standard component of DOT's procedures. For a sources and uses statement, please refer to Attachment B. As noted in Attachment F, it is estimated that average bridge operations and maintenance is $6,300 per bridge. As these bridges are owned by DOT, the agency will be responsible for all operations and maintenance costs, which are addressed in Attachments B and F.

National Objective	**Eligible Activity**	**Responsible Entity**	**Amount of Funds**	**Proposed Source of Funds**
LMI/Urgent Need (Goal of 50% of funds being spent in LMI service areas)	Public Facilities and Improvements	NYS	$111.1 million	(CDBG-NDR $100 million; DOT $11.1 million)

Consistency with Other Planning Documents: This Program initiative is consistent a number of planning documents. As requested in the NOFA, the relevant sections are in Attachment E.

Right-Sizing Critical Dams Resiliency Project

Selection Process: Higher precipitation due to climate change has had, and will continue to have, significant impacts on New York State's existing dam infrastructure, putting thousands of New Yorkers, their homes, businesses, and transportation networks at great risk. To ameliorate significant storm-related vulnerabilities, GOSR, with its partner, the NYS Office of Parks, Recreation and Historic Preservation (Parks), proposes the Right-Sizing Critical Dams Resiliency Project in Harriman State Park and Minnewaska State Park Preserve to ensure these dams meet current safety requirements. The seven dams in this Project are defined as "high hazard" meaning that a dam failure may result in significant or widespread damage to homes, road networks, critical infrastructure, or environmental features. This classification further suggests that the loss of life or significant economic loss is likely.

The Project was developed based on guidance and input from engineering firms specializing in dam safety. These firms performed extensive flood and inundation modeling to determine the consequences of a catastrophic failure of these structures in potential damages and risk to life and property. In addition to consultation with outside engineers, Parks has internal staff with technical backgrounds in dam management and safety and coordinates with DEC on required Federal Dam Safety Standards. The communities directly impacted by potential dam failure have been actively supportive of this Project and are vested in the proposed safety enhancements. Parks has regularly communicated with these communities regarding these dams and their safety.

The Project addresses seven high-hazard dams—First Reservoir Dam, Lake Cohasset Lower Dam, Lake Cohasset Upper Dam, Lake Sebago Dam, Lake Stahahe Dam, Lake Welch Dam, and Tillson Lake

Dam—that must be upgraded to ensure the minimization of downstream impacts due to overtopping. For each dam, the primary deficiency relates to inadequate existing spillway capacity, which could compromise the structural integrity and underpinnings of the dam structure and lead to its failure. Current standards require that the design exceed a 500-year storm event. Additional deficiencies to be corrected include the armoring of upstream and downstream slopes, outlet gate functionality, spillway channel, and spillway elevation.

Project Description: In response to the impacts of climate change and the increasing frequency of severe storm events, this proposal will upgrade the dams' original design from the current 100-year flood standard, to a one-half of the maximum probable flood level, which exceeds a 500-year flooding event. Parks has completed all necessary inspection work to identify the seven critical dams. The dams are located in the Target Areas of Rockland, Orange, and Ulster Counties. Beyond these Target Areas, the beneficial impact of upgrading these dams extends to northern New Jersey, which would also suffer varying degrees of inundation from the failure of one of these dams.

For each of the identified dams, Parks will undertake a competitive procurement process to select qualified firms with relevant engineering and construction expertise to design improvements. Parks will oversee the Project to ensure dam structures meet or exceed all applicable State and federal dam safety standards. State Parks will also coordinate with DEC, which oversees Dam Safety Emergency Action Plans for all the State's dams.

This Project will significantly increase long-term resilience by making physical improvements to these dams to prevent failure, thereby eliminating or dramatically reducing the potential for flooding to hundreds of thousands of residents, businesses and vital transportation corridors, including the Interstate 87 corridor and freight and commuter rail service.

This Project meets the Urgent Need National Objective. Hurricane Irene resulted in the overtopping or near overtopping of all of the dams, with six of the seven dams also heavily impacted by Superstorm

Sandy. It is not anticipated this Project will be a Covered Project because environmental review for each dam will be completed individually.

Benefit to Vulnerable Populations and Section 3 Opportunities: Dam failures result in sudden violent destruction to not only the area near the dam but to areas much farther downstream. Upgrading these seven critical dams will benefit all downstream populations by reducing the risk of potentially catastrophic flooding. Such a failure would also remove from service frequently and heavily used environmental and recreational resources utilized by people of all incomes who visit these State parks to swim and recreate in the facilities that these dams support. The Project is estimated to provide approximately 475 direct and indirect jobs providing a short term and long term economic benefit to the communities in which the dams are located. Where feasible, employment opportunities will be made available to Section 3 residents.

Measuring Success: This Project will eliminate potential catastrophic flooding damages associated with the failure of a dam structure due to overtopping during a severe weather event. Parks, with Palisades Interstate Park Commission (PIPC), a Partner in this Project, will actively collect data, track and evaluate the performance of the dams through regular reports, formal engineering assessments of the structural integrity of the dams and periodic inspections by independent regulatory agencies such as the DEC. Parks will also monitor and document surrounding park facility recreational usage. As regular reports and assessments are already required by various government agencies, it is anticipated that collecting the proposed metrics will not be difficult. These metrics respond to the State's identified URN in housing and infrastructure.

- *Resiliency Value:* Increased capacity of spillway to handle 500-year storm events and prevent overtopping of dams and potential flooding.
- *Environmental Value:* Averted costs of debris removal in streams; reduced erosion of stream banks and averted destruction of natural habitat.

- *Social Value:* Averted costs of damage to public roads and rail lines; continued provision of vital recreational resources and natural habitat.
- *Economic Revitalization Value:* Averted costs of damages to businesses and homeowners; averted costs of business closures; averted public costs for emergency services.

Alternatives Considered: Three alternatives to the proposed Project were considered: removing dams, lowering dam structures by partially or completely draining the associated lakes, and taking no action. The first two are not considered viable alternatives as they would result in severe impacts upon, or the elimination of, heavily used recreational assets. In addition, the costs associated with these alternatives are considered prohibitive as dam removal could cost more than 60 percent of the code compliance upgrades, and lowering the dam structures would cost between 25-40 percent of the upgrades. This does not include the cost of the permanent loss of important recreational and environmental resources, which, when combined with loss of local economic activity and subsequent lowered quality of life, is incalculable. Taking no action is unacceptable given the identified vulnerabilities of the dams and the projected worsening of risk over time and the increase in severity and frequency of intense weather.

Addressing Risks and Increasing Resilience: The proposed Project is clearly tied to the State's URN of housing and infrastructure in the three Target Areas and responds to the State's identified flooding risks and impacts of climate change. The proposed Project will improve flood resilience of seven critical dams which must be brought to current safety standards to minimize the risk of overtopping and flooding.

The safety compliance improvements will afford critical protection and reduce the potential for loss of life, serious injuries and extensive damage to major roadways, passenger and freight rail, private residences, businesses, and infrastructure. Parks has calculated that the proposed Project will protect over 850 properties with a value of over $85 million, as well as over $40 million in roads, and $100-200 million in rail lines.

Models for Other Communities: The work undertaken on these seven critical dams will incorporate and demonstrate the latest safety improvement construction techniques. This is significant given that by 2020, 70 percent of the total dams in the United States will be over 50 years old (Source 16). These Projects will serve as dam safety models and case studies for other states considering similar dam safety and resiliency improvements.

Feasibility: Parks possesses the necessary expertise to bring these seven high-hazard dams to current safety standards. The Project will conform with best practices and draw upon the latest design principles and safety standards to achieve the greatest possible improvement in dam safety. The Project can be scaled by prioritizing the dams based on level of risk.

BCA Summary: The BCA for this program is 2.0. See Attachment F for more detail.

Program Schedule: The Project has an estimated total time for completion of 48 months, with the bulk of this time allocated to engineering analysis, design, and construction. Both the State's Environmental Quality and Review Act (SEQRA) and the National Environmental Protection Act (NEPA) reviews will be conducted on each dam project prior to project construction.

Program Schedule: Right-Sizing Critical Dams Resiliency Project

Task	**Start**	**End**
Process of Authorization to Commence	Mar 2016	Mar 2016
Engineering Analysis and Design (includes engineering procurement)	Apr 2016	Oct 2017
Permitting	Nov 2017	Feb 2018
Bidding Process and Bid Award	Feb 2018	Jun 2018
Construction Staging and Construction	Jul 2018	Feb 2020
Excavation of basin, riprap placement	Aug 2018	Feb 2020*

*Milestone: Project benefits realized

Budget: The cost estimate was determined by working with Parks' internal staff and outside experts. The budget of $49.6 million is consistent with the scope and scale of similar projects. For a sources and uses statement, please refer to Attachment B. Operations and maintenance costs are estimated at $25,000 per dam annually, and more detail on these costs is included in Attachments B and F.

National Objective	Eligible Activity	Responsible Activity	Amount of Funds	Proposed Source of Funds
Urgent Need	Public Facilities and Improvements	NYS	$49.6 million	(CDBG-NDR $44.6 million; Parks $4.9 million; PIPC $.1 million)

Consistency with Other Planning Documents: This Project is consistent with a number of planning documents. The relevant sections of these plans are in Attachment E.

Nassau County Outfall Pipe and Bay Resiliency Project

Selection Process: The Bay Park Sewage Treatment Plant (STP) provides wastewater treatment services to 40 percent of Nassau County (approximately 550,000 people) and discharges an average of 50 million gallons per day into Reynolds Channel West (a tributary of Hewlett Bay) via an 84-inch, 2.3-mile long outfall. Over time, the release of nitrogen and other pollutants from the STP has unbalanced the ecosystem of the Western Bays, undermining the area's natural coastal barrier system through loss of salt marshes and subsequent erosion. During Superstorm Sandy, a storm surge flooded the Western Bays and inundated the Bay Park STP, shutting down critical treatment processes and equipment for 56 hours. The floodwaters resulted in the release of 2.2 million gallons of partially treated effluent into Hewlett Bay. The length of the existing outfall pipe, in combination with the failure of the effluent pumps, placed citizens at risk of illness and degraded water quality in the estuary. To prevent recurrence of these outcomes, the State, with its Partner Nassau County, proposes to replace the existing Reynolds Channel

Outfall with a new tunneled outfall pipe, 138 inches in diameter with a 10 inch lining, extending 5.3 miles from Bay Park STP to a diffuser in the Atlantic Ocean.

Since Superstorm Sandy, non-profits, officials, and agency staff from all levels of government have been actively engaged in addressing the impact of the damage to Bay Park STP and the health of the Western Bays estuary. Groups as varied as Citizens Campaign for Environment, Operation Splash, the Long Island Federation of Labor, Vision Long Island, United Water, residents of Island Park, Residents of the City of Long Beach, and Nassau County Department of Public Works have come together to address these urgent issues. Critical input regarding water quality and environmental issues has been contributed by Stony Brook University School of Marine and Atmospheric Sciences, the U.S. Geological Survey (USGS), Battelle Memorial Institute, and DEC. This proposal is the outcome of these consultations.

Project Description: The proposed outfall pipe will run 2.5 miles between Bay Park and Long Beach and an additional 2.8 miles between Long Beach and the diffuser, and will increase the resiliency of the Bay Park STP by securing it against backflow by tidal wave action during storm surges—preventing future service outages and public health hazards. Furthermore, the consequent reduction of the nitrogen load in the Reynolds Channel estuary will significantly improve water quality, allowing the restoration of coastal marshland in the Western Bays and the natural stabilization of the shoreline, enhancing the natural barrier against wave energy and erosion.

This Project meets the Urgent Need National Objective as the current STP outfall construct poses a serious and immediate threat to community health and welfare. All activities are deemed eligible activities. Another storm surge striking the Western Bays could result in the failure of the STP, the contamination of Western Bay waterways and the inundation of properties and business unprotected by natural barriers. This is a Covered Project and, as discussed below, the State will ensure that the Project meets all Covered Project requirements.

Benefit to Vulnerable Populations and Section 3 Opportunities: A total of 197,450 LMI persons are located within the Bay Park STP service area; 35.9 percent of the area's population. The Project addresses the housing and infrastructure URN in Nassau County because it enables the restorations of marshlands that will act as a storm barrier and protect homes— including 18,426 LMI homes damaged by Sandy— and infrastructure, and prevents damage to the Bay Park STP which serves hundreds of thousands of homes. Nassau County will continue with its successful Section 3 Plan that is already being implemented with all CDBG-DR projects.

Measuring Success: The proposed outfall will reduce nitrogen and pollutants in the Western Bays, and restore the health of the ecosystem of marshlands and eelgrass meadows. U.S. Environmental Protection Agency (EPA) consultants indicate that 80 to 90 percent of the nitrogen loading to the nitrogen-impaired portion of the Western Bays is from the Bay Park STP wastewater effluent discharges. By eliminating nitrogen and pollutants, water quality is expected to improve to a target nitrogen level below current Clean Water Act guidelines. Nitrogen, phosphorus, and other pollutant levels are actively being tracked across 15 sampling stations in the bay and will continue to be measured by State and Federal agencies, including the USGS, EPA, and DEC.

Nassau County is committed to reducing the nitrogen level in the effluent discharge at the Bay Park STP and has conducted various demonstration projects, testing state of the art denitrification technologies. To complement the construction of the outfall pipe, and to achieve a 50 percent reduction in nitrogen load, Nassau County has committed to installing a permanent side stream treatment and a seasonal Biological Nutrient Removal (BNR) system, both of which are in the design phase and expected to be completed within 24 to 30 months.

The following metrics will be tracked through regular assessment:

- *Resiliency Value:* Acres of coastal marshland, which serves as a natural storm-surge barrier, restored or protected.

- *Environmental Value:* Water quality improvements through reduction of nitrogen levels in the Bays; reduction in overgrowth of phytoplankton in the Bays; acres of marshland restored or preserved.
- *Social Value:* Protection of limited affordable housing stock as a result of increased coastal resiliency; decreased frequency of beach closures.
- *Economic Revitalization Value:* Increases in revenue to the tourism and fisheries industries as a result of environmental remediation.

Alternatives Considered: This project responds to the State's demonstrated URN in housing and infrastructure, as well as the coastal flooding risk identified in the State's Phase 1 application. A number of alternative remediation strategies, including tertiary treatment using the existing outfall and also tertiary treatment with land application were considered. None of these alternative strategies achieves the necessary balance of cost and resiliency.

Addressing Risks and Increasing Resilience: The proposed outfall will increase the resiliency of the Bay Park STP by preventing shutdowns due to backflow, and will decrease risks to human health from effluent spills caused by tidal wave action. The Project will enable the growth of a natural barrier of marshlands, which will dissipate wave energy and amplitude, reduce the erosive effect of waves by slowing water velocity, and stabilize shorelines through sediment deposition, the outfall project increases the resilience of communities adjacent to the Western Bays to future storm events. The number of homes and structures in Nassau at risk from future storm events will decrease. The increased natural coastal protection will also safeguard 12 Sandy-flooded power substations which provide electricity to more than 1.1 million customers in Nassau, Suffolk, and Queens Counties.

Models for Other Communities: This proposal can be adapted for other coastal communities that discharge treated effluent into marshlands.

BCA Summary: The BCA was determined to be 3.8. See Attachment F for more detail.

Program Schedule: The duration of the Project is estimated at 56 months. To minimize risk, extensive surveys will be conducted prior to the design process to identify potential areas of concern allowing them to be mitigated during design. The Project will include a high level of environmental review based on a range of sampling (e.g. sediment and water quality), surveying (e.g. field, bathymetric, ecological), modeling (e.g. hydrodynamic), studies (e.g. geotechnical), and analysis (e.g. routing and tunneling). The resulting reports and reviews will inform regulatory and stakeholder consultation, including public notice and comment periods, prior to submission of the final environmental impact statement.

Program Schedule: Nassau County Outfall Pipe and Bay Resiliency Project

Task	**Start**	**End**	**Months**
Project Administration	Q2 2016	Q3 2020	54
Procurement Services	Q2 2016	Q3 2017	17
Design Process	Q4 2016	Q4 2017	11
Sampling and Survey Program	Q2 2016	Q2 2018	25
Environmental Review	Q2 2016	Q2 2017	12
Obtaining federal, state and local permits	Q2 2016	Q2 2017	12
Construction Process	Q4 2017	Q3 2020	35*

*Milestone: Project benefits Realized

Budget: The estimated total capital cost of this project is $450 million. This cost estimate is based on a top-down approach informed by a history and knowledge of project pricing labor, materials, and equipment costs, and has been adjusted for local area labor rates, based on the prevailing wage requirement on Long Island. Updated to reflect technical advances and current construction market trends, this cost estimate is lower than previous, conservative estimates. For a sources and uses

statement, please refer to Attachment B. Operations and maintenance costs are addressed in Attachments B and F.

National Objective	Eligible Activity	Responsible Entity	Amount of Funds	Proposed Source of Funds
Urgent Need	Public Facilities and Improvements	Nassau County	$ 450 million	FEMA HMGP (pending formal commitment, $150 million); Nassau County Capital Fund (formal commitment, $104 million); NYS Environmental Facilities Corporation (formal commitment; $45,376,250—75% loan to be repaid by Nassau County, 25% EPA grant); CDBG-NDR ($150.6 million)

Consistency with Other Planning Documents: This Project is consistent with a number of planning documents. The relevant sections of these plans are provided at Attachment E.

Covered Projects: The proposed ocean outfall pipe is a Covered Project. It is described above under Selection Process and Project Description, and the proposed budget, including federal, State, and local funding sources, is detailed under Budget. This Project is an eligible Public Facilities and Improvements activity under Section 105(a)(2) of the Housing and Community Development Act, meets the National Objective of Unmet Need, and addresses impacts of Superstorm Sandy as described above under Addressing Risks and Increasing Resilience.

This Covered Project is supported by the State's updated impact and unmet needs assessment. As outlined in the State's Action Plan Amendment 8, the Bay Park STP ocean outfall pipe is one of five

Covered Projects determined to have the greatest remaining unmet need. Updated estimates for this application document an unmet need of $150.6 million.

This Covered Project is supported by a transparent and inclusive consultation and decision-making process. See Attachment H.

The State and Nassau County will monitor and evaluate the efficacy and sustainability of this Covered Project, as detailed above under Measuring Success, and in particular will monitor improvements in water quality, improvements in the health of coastal wetlands, and consequential decreases in damage to residences and other structures following storm events and increases in public health.

This Covered Project is closely aligned with the President's Climate Action Plan as it will reduce nitrogen levels in the Western Bays, remediate coastal wetlands, prevent coastal erosion, and as a result, protect homes and communities from storm surge. In addition, eelgrass meadows are also a vital part of the solution to climate change and, per unit area, can store up to twice as much carbon as the world's temperate and tropical forests (Source 17).

Exhibit F Leverage
State of New York
ExhibitFLeverage_NYS.pdf

The leverage documentation in Attachment B demonstrates firm direct financial commitments that New York State has obtained for its proposed projects and programs. These commitments will significantly increase the effectiveness of the proposed activities and ensure that the impact of federal funds is maximized to the fullest extent possible. The total direct commitments to the State's NDRC proposal that are eligible as leverage equal to $384.17 million, equal to 81.7 percent of total CDBG-NDR funds requested. In addition to these leveraged funds, the State is contributing $10.9 million in CDBG-DR funds to the proposed projects and programs. Operations and maintenance costs are detailed in Attachment B and Attachment F.

Manufactured Home Community Resiliency Pilot Program: Direct financial commitments of $3 million in financing from the Leviticus Alternative Fund, $3 million in financing from the Manufactured Homes Cooperative Fund Program, and $15 million in financing from the Community Preservation Cooperation, representing leverage of 43 percent of CDBG-NDR funds requested.

Public Housing Resiliency Pilot Project: Direct financial commitments of $2.7 million in tax-exempt debt from NYS Homes and Community Renewal/Housing Finance Agency (HCR/HFA), $16 million in credit equity from Enterprise Community Investments, $9.6 million in FEMA PA funds from participating housing authorities, and a $3.7 million deferred developer fee. This represents 89 percent of CDBG-NDR funds requested. In addition to this leverage, the State is contributing $10.26 million in CDBG-DR funds to this project.

Right-Sizing Culverts and Restoring Natural Floodplains Resiliency Program: Direct financial commitments of $7.85 million from the NYS Department of Environmental Conservation (DEC) and the Catskill Watershed Corporation (CWC). Local match on the CDBG-NDR funds will total $7.89 million. These funds represent leverage of 17.5 percent of CDBG-NDR funds requested. In addition to this leverage, the State is contributing $643,000 in CDBG-DR to this program.

Right-Sizing Bridges Resiliency Program: Direct financial commitments of $11.1 million from the NYS Department of Transportation (DOT), representing leverage of 11.1 percent of CDBG-NDR funds requested.

Right-Sizing Critical Dams Resiliency Project: Direct financial commitments of $4.86 million from the New York State Department of Parks, Recreation and Historic Preservation (Parks) and $.1 million from the Palisades Interstate Park Commission (PIPC), representing leverage of 11.1 percent of CDBG-NDR funds requested.

Nassau County Outfall Pipe and Bay Resiliency Project: Direct financial commitments of $45,376,250 million from the NYS Environmental Facilities Corporation (EFC) Storm Mitigation Loan Program for design through geotechnical analysis; $104 million from the Nassau County Capital Fund toward construction, and $150 million from the Federal Emergency Management Agency's Hazard Mitigation Grant Program (FEMA HMGP) toward construction, pending approval, representing leverage of 198.76 percent of CDBG-NDR funds requested.

Exhibit G Long Term Commitment
State of New York
ExhibitGLongTermComm_NYS.pdf

Progress Toward Meeting Phase 1 Commitment: HUD's feedback on the State's Phase 1 NDRC application noted that while the application demonstrated the State's long-term commitment to resiliency through several initiatives, including the NY Rising Community Reconstruction Program and the Community Risk and Resiliency Act (CRRA), it could have more clearly outlined specific baseline and goal measures for those commitments. While not specifically outlined in that Phase 1 application, the State has made significant progress toward the implementation of CRRA in the intervening months. The State has formed several working groups for the purpose of developing guidance required by CRRA and implementing provisions of the act. As the January 2016 deadline for promulgating sea-level rise projections approaches, DEC released draft projections in June 2015 and held a series of public information listening meetings to gather public comment.

Lessons Learned: Over the past decade, New York State has established one of the most ambitious long term climate change mitigation and adaptation agendas in the nation. Recognizing that resilience is at the nexus of climate change mitigation and adaptation, in January 2015 Governor Cuomo launched the Climate Smart Communities initiative to weave together and strengthen the Administration’s efforts to reduce greenhouse gas (GHG) emissions and help the State adapt to the forecasted impacts of changing temperatures, sea levels, precipitation, and other climate factors at the local level (Source 1).

The State’s recovery response to the Qualified Disasters of 2011 and 2012 is firmly rooted in resilience. In the immediate aftermath of Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee, Governor Cuomo established the NYS2100 Commission, which brought together a multi-disciplinary team of experts to develop actionable recommendations to improve infrastructure resilience. Released in January 2013, the NYS2100 Commission’s report includes short- and long-term energy, transportation, land use, insurance, and infrastructure financing recommendations, that continue to inform the State’s cross-cutting approach to rebuilding and institutionalizing resilience as a central component of policy development, project planning, and implementation (Source 2). These recommendations provide a

framework to which the lessons learned in implementing resilience measures can be added, enabling dialogue about public policy approaches among state agencies and improving public awareness of the changes that need to be adopted to build resilience.

In June 2013, Governor Cuomo established the Governor's Office of Storm Recovery (GOSR) to administer approximately $4.4 billion in U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant— Disaster Recovery (CDBG-DR) funding via four main programs: Housing Recovery, Small Business, Community Reconstruction, and Infrastructure. Incorporated under the "NY Rising" umbrella, GOSR programs aim to build back *better* by meeting urgent recovery needs, integrating long-term resiliency, and iteratively incorporating lessons learned throughout design and implementation.

In fact, the lessons learned in developing this NDRC proposal are already being put into action throughout the State. Inspired by the July 2015 NDRC Resilience Academy in Denver, the State has committed to participating in the Resilience AmeriCorps VISTA Pilot Program, with a focus primarily on advancing social resiliency in New York City communities. After hearing a resounding need for the formal identification of facilities and organizations to serve local recovery needs, GOSR created the NY Rising Community Center (NYRCC) Program, a network of resilient facilities in storm-impacted communities where nonprofit 501(c)(3) organizations will provide expanded recovery and social services. Neither evacuation centers nor shelters, these community hubs emphasize social and economic resilience. Resilience AmeriCorps Members will leverage and enhance the NYRCC Program through the pilot phase, supporting center operators in conducting research and assessing risks to and vulnerabilities of low-income residents to determine what is working, what can be expanded, and if there are gaps in resilience activities. Centers will also facilitate greater access for low-income communities to federal resources and tools. The Resilience AmeriCorps VISTA Pilot Program will activate the lessons learned

in the development and implementation of the State's recovery program, and in the development of this application.

Resilience AmeriCorps VISTA Pilot Program

Outcome Measure	Baseline	Goal	Effective Date	Duration
Organizations served and residents engaged	0	Eight summits of 20+ community-based organizations; 10 community-specific resilience plans; one master resilience plan for communities throughout the State; 500+ residents engaged through workshops/outreach.	1st Quarter 2016	Monitoring for at least two years. Will create a framework for continued service and master plan will provide ongoing guidance.

Legislative Action: Governor Cuomo's signing of CRRA on September 22, 2014, is the most significant legislative demonstration of the State's long-term commitment to a more resilient future. CRRA ensures that state funding and permitting decisions include consideration of the effects of climate risk and extreme weather events, amending various sections of the Environmental Conservation Law, Agricultural and Markets Law, and Public Health Law accordingly. It will apply to all applications and/or permits from January 1, 2017. The law's provisions require:

1. The NYS Department of Environmental Conservation (DEC), no later than January 1, 2016, to adopt regulations establishing science-based state sea level rise projections (to be updated no less than every five years);
2. DEC and the NYS Department of State (DOS) to develop additional guidance on the use of resiliency measures that utilize natural resources and natural processes to reduce risk;
3. DOS, in consultation with DEC, to prepare model local laws concerning climate risk including sea level rise, storm surges and flooding, based on available data predicting the likelihood of future extreme weather events, including hazard risk analysis data if applicable, and to make such model laws available to municipalities; and

4. Consideration of climate risk including sea-level rise, storm surges, and flooding, based on available data predicting the likelihood of future extreme weather events in the following: State Smart Growth Infrastructure Policy Act; Water Pollution and Drinking Water Revolving funds; Environmental Protection Fund (including municipal landfill gas management projects, municipal parks, local waterfront revitalization programs, coastal rehabilitation projects, and farmland protection); and major permits issued pursuant to the Uniform Procedures Act.

CRRA advances a number of important recommendations of the NYS2100 Commission and, according to the Georgetown Climate Center, it is the only legislation in the nation to require that climate impacts be a part of the planning, permitting and funding process—and not just in the State's coastal areas, but in all 62 counties (Source 3). Actions under CRRA will help the State's agencies and communities reduce identified vulnerabilities by improving data available for resiliency decision making. This data will underpin forward-looking climate change analysis and ensure that the state's almost 20 million residents benefit from evidence-based disaster mitigation measures. Select CRRA-related metrics are provided below.

Community Risk and Resiliency Act (CRRA)

Outcome Measure	**Baseline**	**Goal**	**Effective Date**	**Duration**
Infrastructure projects reviewed with consideration of climate risk	0	Approx. 524 per year (based on permits in 2014)	1/1/2017	Ongoing
Major projects reviewed annually through a process that considers future flooding hazards for permits related to: stream disturbance, freshwater wetlands, tidal wetlands, and coastal erosion hazard areas Future flooding hazards	0 (Minimal guidance existed for permit reviewers on future flooding hazards)	Approx. 515 permits reviewed per year for flooding hazards (stream disturbance: 200; freshwater wetlands: 250; tidal wetlands: 50; coastal erosion hazard area: 15)	1/1/2017	Ongoing

Local land use tools amended or enacted to improve community resilience to sea level rise, storm surge, and flooding	Of 1551 state communities: 78 percent had zoning, 73 percent subdivision regulations, and 70 percent site plan review authority (2008 survey)	5 percent of municipalities each year to adopt a change to a land use law that will increase resiliency	Anticipated effective date 01/1/2019	Ongoing. Local laws will draw on information about climate change and resilient land use tools

Complementing CRRA, section 192-h of Article 16 of the Agriculture and Markets Law, signed in March 2013, now requires standby power sources at retail gas stations near highway exits or evacuation routes in NYC, Rockland, Westchester, Nassau, and Suffolk Counties as part of the broader Fuel NY program (Source 4). When Superstorm Sandy knocked out power throughout the region, many gas stations were unable to pump fuel.

192-h of Article 16 of the Agriculture and Markets Law

Outcome Measure	**Baseline**	**Goal**	**Effective Date**	**Duration**
Gas stations with transfer switch installed	0	1,000	4/1/2014 – all applicable stations near evacuation routes with transfer switch; 8/1/2015 – 30 percent of applicable chain stations with transfer switch.	Ongoing

Raising Standards: In the aftermath of the recent series of severe storms, the State identified a number of ways in which changes to standards could measurably improve resilience. The State already employs the best practice of requiring that all new or substantially improved buildings in flood hazard areas have the lowest floor elevated above the design flood elevation plus the appropriate freeboard of two feet for residential structures, or as determined by ASCE 24-05 for other structures. DOS is also championing resiliency through amendments to the State Building Code, which are currently under review and consideration by the State Building Codes Council. A Council-approved draft is expected to be released for public comment by the end of 2015, and a final draft is expected to be adopted in mid-2016. Pending updates include amending the Residential Code to require buildings and structures located in a floodway be designed and constructed in accordance with the design standard ASCE 24-2013 (Flood

Resistant Design and Construction). For example, new or substantially improved health care facilities in flood prone areas—including hospitals, nursing homes, assisted living—must be equipped with an electrical connection for hookup of temporary generator(s) or with secondary power equipment above the design flood elevation.

DOS is also improving long term resilience through the NYS Coastal Management 2016-2020 Section 309 Assessment and Strategy, which examined issues and opportunities at nine coastal enhancement areas (Source 5). The Strategy adopts a forward looking approach to climate change and ensures that, if the regulatory flood elevation of the NFIP increases in the future (due to changes in stormwater discharge, local water levels or sea level), the building code regulatory standard will automatically increase, enabling resilient adaptation over time.

State Building Code

Outcome Measure	**Baseline**	**Goal**	**Effective Date**	**Duration**
Residential building construction permits issued in the State to which more resilient standards apply	0	36,286 per annum (based on 2014 figures)	mid-2016	Ongoing

The State is also measurably increasing resilience through the Environmental Facilities Corporation (EFC), which provides low-cost financing for local wastewater and drinking water infrastructure. EFC has been working with DEC and New England Interstate Water Pollution Control Commission (NEIWPCC) in developing revised construction standards that will add resiliency into the code for wastewater and drinking water facilities. The EFC's Storm Mitigation Loan Program (SMLP) requires that critical components of treatment facilities (such as pumps, control panels and power systems) be protected to withstand, at a minimum, the 500-year flood elevation. Expected to be finalized by early 2016, the guidance will become the standard for construction and rehabilitation of treatment facilities for the State and will benefit a number of Target Areas. In addition, the SMLP is open to resilience

improvements to treatment facilities through green infrastructure including permeable pavement, green roofs, constructed wetlands, and riparian buffers.

EFC Storm Mitigation Loan Program

Outcome Measure	Baseline	Goal	Effective Date	Duration
Number of beneficiaries in the program Target Area	0	13 million New Yorkers (including residents in the following Target Area: Orange, Ulster, Westchester, Rockland, Nassau, and Suffolk)	All projects completed and funds disbursed by July 2019.	20-50 years (Typical treatment plant useful life)

The State is committed to strengthening riparian buffers and wetlands to mitigate the effects of more frequent and extreme flooding events and to protect and improve water quality. This includes providing increased protection of freshwater and tidal wetlands through the state's wetland laws—increasing penalties for violations, updating existing wetlands maps, and expanding the reach of wetlands laws to include smaller wetlands. The State will also complete comprehensive trends analyses of wetlands to track acreage losses and gains of various wetland types (Source 6).

State protection of tidal wetlands

Outcome Measure	Baseline	Goal	Effective Date	Duration
Restoration of tidal wetland acreage	25,000 acres of tidal wetland (DEC estimate)	26,000 acres (restoration of 1,000 acres lost since 1974)	September 2014	Ongoing

Resilience Actions Related to Plan Updates or Alignment: The examples below provide a snapshot of some of the State's recent resilience plan updates and alignment actions.

Hazard Mitigation Plans: The State updated its Hazard Mitigation Plan (State Mitigation Plan) to include sea-level rise in January 2014. This plan fulfills the requirements of 44 CFR and is aligned with CRRA. The State Mitigation Plan—most recently submitted to FEMA in December 2013—is updated every three years by the NYS Division of Homeland Security and Emergency Services (DHSES) with assistance from sister agencies and other interested stakeholders. The State Mitigation Plan highlights to state agencies the need to prioritize particular at-risk areas, provides a guide and local plan development tools to local jurisdictions in completing their Local Hazard Mitigation Plans (LHMPs), and drives a coordinated approach between State, territorial, tribal and local entities. The alignment of plans at the State and County level is driven by a desire to speed up recovery and improve resilience planning supported by the DHSES Mitigation Section (Source 7). DHSES also tracks compliance with planning requirements.

Transportation: The State has partnered with the Federal Highway Administration (FHWA) in collaboration with regional departments of transportation and metropolitan transportation planning organizations to produce the New York-New Jersey-Connecticut Transportation Vulnerability Assessment and Adaptation Analysis. This research project is an example of the planning for resiliency spurred by recent extreme weather events and is being funded by the FHWA. The goals of this project are to assess the impacts of Superstorm Sandy (and to some extent Hurricane Irene, Tropical Storm Lee, and the Halloween Nor'easter in 2011) on transportation assets; identify adaptation strategies to increase the resilience of those assets; perform a gap analysis for the region, and consolidate data sources and information. The project is scheduled for completion on March 31, 2016. The findings from the project will be incorporated into the State's future transportation planning and will help to increase preparedness for the impact of climate change by aligning best practices among regional participants.

Housing: As part of developing a new long-term plan for affordable housing development, NYS Homes and Community Renewal (HCR) is creating a comprehensive policy to align "green" housing requirements across many State housing grant and loan programs. This policy builds on aggressive green and resilient housing requirements already reflected in State Building Code, funding program requirements, and optional competitive project scoring elements.

Economic Development: As part of Governor Cuomo's transformative plan to improve the State's economic development model, the Regional Economic Development Council Consolidated Funding Application (CFA) was created to serve as the single entry point for access to economic development funding (Source 8). This streamlined model now features scoring components to reward the inclusion of resilience measures in a grant application.

Resilience Planning: NYS Department of State (DOS)'s Office of Planning and Development is developing a Request for Applications to complete Resilience Action Plans for 11 reaches in the South Shore Estuary Reserve (SSER). These Action Plans will address community recovery and resiliency needs that did not qualify for New York Rising planning assistance. They will prioritize "transition to action" and queue up a range of capital improvement projects that can be funded with subsequent SSER Environmental Protection Fund (EPF) funding and other State funds. DOS will use SSER EPF appropriations to identify a range of capital improvements for community asset protection and shoreline vulnerability, including living shorelines and green infrastructure.

Financing and Economic Issues: In addition to the previously-mentioned efforts to fund and finance resilience through the CFA grant and EFC loan programs, the State is committed to addressing power grid resilience through a suite of funding mechanisms. The 2015 State Energy Plan issued in June established the nation's most ambitious goal of reducing GHG emissions from the energy sector—power, industry, buildings, and transportation—40 percent below 1990 levels and obtaining 50 percent of all electricity from renewable energy sources by 2030 (Source 9). As a demonstration of this commitment,

in October 2015, Governor Cuomo signed the "Under 2 MOU," an agreement between states, provinces, and cities worldwide to affirm their resolve to help keep the earth's average temperature from increasing 2 degrees Celsius by 2100.

Through its Reforming the Energy Vision (REV), the State is a national leader in advancing the clean energy economy, initiating regulatory proceedings to modernize the utility industry and programs to reduce emissions such as the Clean Energy Fund, NY Sun, BuildSmart NY, and NY Green Bank (NYGB) (Source 10). The NYGB, created in December 2013, is a publicly-capitalized investment fund designed to stimulate private capital for innovative energy investments to help create a cleaner and more resilient power grid. The NYGB is a key component of the State's integrated energy strategy which seeks to promote more efficient use of energy, utilization of renewable energy resources, and wider deployment of other distributed energy resources, like microgrids, on-site power supplies, and storage. The NYGB's current business plan was released in June 2015 and commits to realizing specific benefits, such as a strong leverage of private sector capital. Around $200 million of NYGB investment is expected to mobilize $600 million of private capital, producing a 3:1 ratio. NYGB Market Studies estimate that this ratio could be 8:1 after 10 years (factoring in reinvestments), and even higher for a 20-year time horizon (Source 11).

NYRSERDA has also teamed up with GOSR to launch NY Prize, a $40 million first-in-the-nation competition to create community microgrids that can operate independent of the power grid. NYSERDA recently awarded funding to 83 communities for feasibility studies and GOSR will ultimately help fund the development of up to five microgrids.

Microgrid pilot program

Outcome Measure	**Baseline**	**Goal**	**Effective Date**	**Duration**
More resilient grid with improved islanding capabilities	0 State-funded microgrids	Five + microgrids	Projects completed by September 2019.	Ongoing

In addition to the construction standards for wastewater and drinking water facilities and SLMP standards mentioned above, the EFC administers the federal Clean Water State Revolving Fund (CWSRF), providing low-cost financial assistance primarily to municipalities for water quality infrastructure projects. In 2013, EFC made available $340 million for resiliency projects in the 14 counties impacted by Hurricane Sandy. In 2015, the CWSRF made available $1.2 billion of financial assistance to all 62 State counties, while through the State budget, EFC received $200 million to provide grants to municipalities for water quality infrastructure projects over three state fiscal years. These funds are being made available through the New York State Water Grants program, one of the targets of which is the 'enhancement of wastewater collection/treatment system resiliency from sea level rise and damage from extreme weather.'

Additionally, the Empire State Development, (ESD) in consultation with the DEC, has administered $16 million in grant program funds to 23 counties to support flood mitigation projects along waterways impacted by Hurricane Irene and Tropical Storm Lee. This includes the State's $9 million Flood Mitigation Grant Program and $7 million in federal Homeland Security funds.

New York
Governor's Office of Storm Recovery

National Disaster Resilience Competition Phase 1 Application
As submitted to the U.S. Department of Housing and Urban Development (HUD),
March 27, 2015

Competition Schedule:

The National Disaster Resilience Competition is a year-long competition structured in two phases: (1) the framing phased and (2) the implementation phase.

- Phase 1 applications are due to HUD by March 27, 2015.
- HUD anticipates notifying applicants if they have been accepted to Phase 2 in June 2015.
- If invited by HUD to participate in Phase 2, GOSR will have 120 days after the date of an invitation letter to design and develop projects.
- HUD anticipates taking up to 60 days after the Phase 2 submissions before announcing awards.
- HUD must obligate the funds (sign a grant agreement) by September 30, 2017.
- Grantees will have 24 months to expend funds after obligation.

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Exhibit A Executive Summary
New York State
ExhibitAExecutiveSummary_NYS.pdf

The New York State Governor's Office of Storm Recovery (GOSR) was established by Governor Andrew M. Cuomo in the wake of a series of unprecedented disasters: Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. From its inception, GOSR has worked to program federal recovery dollars including Community Development Block Grant Disaster Recovery (CDBG-DR) funds to promote a long-term resilient recovery in New York State. Through the National Disaster Resilience Competition (NDRC), GOSR will build upon the State's ongoing investment in resilience, capitalizing upon the opportunity to respond and adapt to newly understood risks. As such, the State's application to the NDRC:

- Identifies the following Most Impacted and Distressed target areas which meet the unmet recovery needs thresholds outlined in the HUD NDRC Notice of Funding Availability: Greene County, Nassau County, Schoharie County, Suffolk County, Tioga County, Westchester County, and the five counties of New York City;
- Describes and establishes GOSR's capacity and experience in working across sectors to design and implement recovery and resiliency projects;
- Frames continuing infrastructure, economic revitalization, and housing unmet recovery needs by building upon GOSR's Action Plan Amendment Eight (APA8) unmet needs analysis, as well as consultation with the State's NDRC Interagency Working Group and input from eligible counties, and other stakeholders;
- Outlines a holistic, integrated approach that considers the physical, social, economic, and environmental resilience of both man-made and natural systems;
- Leverages and seeks to advance GOSR's collaborative relationships with various partners at the local and regional scales, including governments, state agencies,

academic institutions, non-governmental organizations, foundations, and private-sector entities; and

- Demonstrates the State's long term commitment to catalyzing a resilient recovery.

GOSR has successfully implemented recovery and resiliency programs in the areas of housing, economic development, infrastructure, and community reconstruction. Synthesizing lessons learned from these programs, including the NY Rising Community Reconstruction (NYRCR) Program, a first-of-its-kind grassroots resiliency effort, GOSR has identified two dominant community typologies—coastal and riverine—which are at extreme risk from flooding caused by increasingly frequent extreme weather events and flooding connected to climate change.

GOSR's systems-based approach hinges upon identifying strategies that will simultaneously improve the physical, social, economic, and environmental resilience of vulnerable riverine and coastal communities. This approach builds upon the recommendations of the NYS 2100 Commission, which was established by Governor Cuomo following Superstorm Sandy, and incorporates expert feedback from agency partners, counties, and other stakeholders. Additionally, select state agencies and counties have already provided substantial input regarding potential strategies, partnerships, and funding sources. Should the State advance to Phase 2, GOSR will continue to work with stakeholders to identify additional target areas, as appropriate, and to develop and refine impactful resiliency projects. In Phase 2, GOSR will undertake a multi-systems analysis to better define the characteristics common to coastal and riverine communities. GOSR will then select pilot communities and work with partners to design innovative resilience solutions tailored to the regional context.

The ultimate goal is to develop, implement, evaluate, and scale projects that provide multiple co-benefits and improve everyday quality of life through cross-sector collaboration with state agencies and other partners. NDRC funding will further empower the State to leverage existing resilience efforts and to catalyze new investments. Precedent examples of systems-based solutions include the two Rebuild by Design projects GOSR is working to implement; the Red Hook Integrated Flood Protection System project in Brooklyn; the Oakwood Beach buyout and green infrastructure project on Staten Island; and the buyout, green infrastructure, and affordable housing project proposed by the NYRCR Planning Committee in the village of Sidney, which is being implemented through the NYRCR Program and with Federal Emergency Management Agency Hazard Mitigation Grant Program funds. These efforts also reflect the State's prioritization of nature-based features, which can be designed to mitigate physical risk, while delivering economic, social, and environmental co-benefits. Nitrogen-mitigation will be a critical element of any environmentally-oriented resilience strategy going forward, and the State has already made significant investments toward reducing nitrogen pollution on Long Island through investments in sewer infrastructure in Suffolk County and critical wastewater treatment facilities like Bay Park in Nassau County.

Exhibit B Threshold Requirements
New York State
ExhibitBThresholdReq_NYS.pdf

Introduction

For the purposes of the HUD National Disaster Resilience Competition (NDRC) Phase 1 application, HUD has identified the State of New York as an eligible applicant. This document serves as the one application being submitted to this competition by the eligible applicant, New York State. The State has identified unmet economic revitalization, infrastructure, and housing recovery needs across 11 counties (Greene, Nassau, Schoharie, Suffolk, Tioga, Westchester, and the five counties of New York City), composing the State's 11 target areas in this Phase 1 application. These NDRC-eligible counties constitute 11 of New York State's 15 counties that have been identified by HUD as Most Impacted and Distressed areas as a result of federally declared disasters from 2011 through 2013. This Exhibit B narrative response is supported by the best available data and conforms to the threshold requirements outlined in Appendix G of the NDRC Notice of Funding Availability (NOFA) released on September 17, 2014. This narrative is also informed by a comprehensive unmet needs analysis recently undertaken by the State as part of Action Plan Amendment Eight (APA8), as required by FR-5696-N11 issued October 16, 2014. As a current HUD grantee, the State periodically amends its Action Plan to document the proposed use of funding to support continued recovery efforts. This process is one of the ways the State possesses a deep understanding of the evolving unmet recovery needs of storm-impacted communities.

The State considers the data referenced as part of the APA8 unmet recovery needs analysis as the best available data for purposes of this application. These data also form the basis for understanding the extent of the populations impacted as a result of recent disasters. While they are not necessarily predictive of populations that may be impacted in future events, they will

inform the analyses and modeling conducted by the State in framing its future vulnerabilities and hazards.

These data display the unmet recovery and rebuilding needs of the State and its counties as a whole, and demonstrate that of impacted populations, those with low- and moderate-income, limited English proficiency, functional needs, the elderly, or isolated are disproportionately burdened by the effects of these disasters. The State's approach to recovery and rebuilding is grounded by this understanding of vulnerable populations, and the State will continue to address the specific needs of these populations in its current and future rebuilding and recovery efforts.

As discussed in Exhibit E (pages 56-61) and Attachment D (pages 96-111), in addition to establishing disaster impacts and unmet recovery needs in APA8, the State engaged in extensive outreach to state agencies, eligible counties, and other stakeholders to identify unmet recovery needs for this Phase 1 application. As such, this narrative reflects NDRC-specific input that stakeholders have contributed via survey submissions and other mechanisms.

It is critical to note that the State can identify additional target areas in Phase 2 of the NDRC application. The State will continue to work with all relevant stakeholders—especially Declared counties[1]—to assess both new and existing data that might establish additional target

[1] In Appendix B of the NDRC NOFA, HUD designated 50 counties across the State as Declared (i.e. counties receiving a Federal Disaster Declaration from 2011 to 2013) and therefore eligible for consideration as part of this Phase 1 application. Of those 50 counties, HUD designated 15 counties as Most Impacted and Distressed and another 29 sub-county Census Tracts and/or Places within 11 Declared counties as Most Impacted and Distressed. As per HUD, Tribal Areas located with Most Impacted and Distressed counties are eligible for consideration as part of this

areas for inclusion in the Phase 2 application. In order to be considered as an NDRC target area, the county or sub-county area must meet: 1) Most Impacted threshold criteria, 2) Distressed threshold criteria, and 3) unmet recovery needs threshold criteria. Regardless, the solutions the State intends to develop will be scalable and replicable outside of the target areas introduced above.

The State is committed to meeting all of the threshold requirements per the NDRC NOFA. Should the State advance to Phase 2, the State will ensure that all proposed activities meet a national objective, are eligible activities, incorporate resilience activities as outline in the NOFA, and have a clear tie back to the disaster which qualified the target area. The State understands that the overall, over 50% of CDBG-DR funds must meet the national objective of benefiting low- and moderate-income income individuals. These threshold requirements will be further detailed in Phase 2 as the activities are refined and presented to HUD per the NOFA requirements. As Part of this Phase 1 application, the State is submitting CBDG-NDR Application Certifications in Attachment C (pages 90-93). New York State meets all of the applicable requirements of the General Section in addition to the requirements of the NDRC NOFA.

Economic Revitalization Unmet Recovery Needs

The State has identified continuing unmet economic revitalization recovery needs due to Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee in Most Impacted and Distressed areas that cannot be addressed with existing resources. To meet the unmet needs thresholds

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Phase 1 application, and Tribal Areas located within Declared counties are automatically deemed Distressed, though not Most Impacted.

outlined in Appendix G, the State has identified a minimum of five businesses with remaining repair needs. As discussed below, the extensive and continued outreach conducted in the administration of the NY Rising Small Business Recovery Program meets the following data source requirements outlined in the NOFA's Appendix G: a windshield survey showing a minimum of five businesses with remaining unmet repair needs; a survey of at least five business owners confirming damage due to the disaster and repairs not completed due to not receiving adequate resources; and the recorded addresses of those businesses.

Launched in spring 2013, the NY Rising Small Business Recovery Program was established to serve eligible small businesses impacted by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. Tens of thousands of businesses were located in Census Tracts with greater than one foot of flooding during Superstorm Sandy. These businesses suffered physical damage or, at minimum, were closed for extended periods of time due to power outages and limited transportation networks. As of December 2014, over 3,000 businesses submitted applications to the program and are at various stages of review or approval in the application process. Approximately 700 applications have been approved for grant assistance to date. The program currently remains open for new applications.

The Governor's Office of Storm Recovery (GOSR) executed subrecipient agreements with a statewide network of Small Business Development Centers (SBDCs) through the State University of New York (SUNY) to assist in the administration of the program. In addition, the State engaged the Empire State Development Corporation to conduct additional outreach for the program. The State's extensive SBDC network is uniquely positioned to provide both initial outreach and on-going technical assistance to storm-impacted businesses. Every applicant to the Small Business Recovery Program undergoes four levels of review:

- An *initial review* by the SBDC Business Advisor (BA), who is located in the field and works directly with the business applicant as the primary point of contact. The BA works closely with the applicant in person and over the phone throughout the application process. This includes a site visit.
- A *second level of review* by the SBDC Case Manager Lead who performs a QA/QC of the BA's work prior to submitting the file to GOSR for final underwriting.
- An *initial underwriting* by a GOSR Underwriter and support staff. This review includes, but is not limited to an anti-fraud, waste, and abuse (AFWA) check, duplication of benefits verification, confirmation of proof of damage, and the review for reasonableness of eligible expenses.
- A *final review* by GOSR management for compliance with program policies and procedures.

The program performs one or all of the following additional reviews in assessing applicants requesting construction-related assistance:

- Estimated Cost of Repair (ECR) and Allowable Activities (AA) Third Party Damage Inspection: Per program policies and procedures, all applicants seeking construction assistance for future or past repair and/or mitigation work are required to have a damage assessment from the program's vendor. The damage assessment provides a valuation of the damages suffered by the business and also either calculates the value of the work already completed or calculates the value of the work to be completed.

- Third Party Environmental Checklist: Per program policies and procedures, all applicants seeking construction-related assistance are required to comply with all HUD environmental requirements, as outlined in 24 CFR Part 58. The environmental review (ERR Cat Ex A) for construction activities includes a site visit and the completion of an on-site National Environmental Policy Act checklist, which is carried out by the Program's vendor.
- BA Site Visit: if the BA or GOSR determines that additional verification is needed to confirm the level of damage and outstanding recovery needs, a site visit with the business applicant to tour the impacted business location will be scheduled.

In cases where there is insufficient evidence of a site visit or windshield survey based on the criteria above, the State has conducted additional site visits and communicated with the business to confirm that there are continuing unmet needs.

Through a review of applicant files, ongoing technical assistance, and site visits, the State has identified continuing unmet economic recovery needs in the target areas outlined below. In summary, for the purposes of meeting the unmet economic revitalization recovery needs threshold for this Phase 1 application, the State presents data to demonstrate that small businesses have been subject to at least one site visit to validate damage and establish remaining unmet needs. Based on available HUD guidance, the State is confident that these inspections and verification procedures surpass a standard definition of a windshield survey in methodological rigor—and therefore meet—the data source guidelines outlined in Appendix G to demonstrate unmet economic revitalization recovery needs.

Infrastructure Unmet Recovery Needs

The State has identified continuing unmet infrastructure recovery needs due to Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee in the Most Impacted and Distressed target areas that cannot be addressed with existing resources. To meet the unmet needs thresholds outlined in Appendix G, the State has identified quantified damage (i.e. FEMA Category C to G) that remains unrepaired as a result of inadequate resources. The State presents FEMA project worksheets with the estimated damage and repair amounts and unfunded repair needs to establish a minimum of $400,000 in permanent unfunded infrastructure repair need and to describe the location and damage of the permanent public infrastructure relative to the location of the Most Impacted and Distressed target area. In the following narrative, the State indicates through a sources and uses document if there is no current source of funding for the projects associated with the worksheets.

Target Areas

Greene County

Most Impacted and Distressed

HUD has designated Greene County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and Superstorm Sandy). For this Phase 1 application, the State designates the entire county as a target area.

Greene County, located west of the Hudson River between Kingston and Albany, was severely impacted by Hurricane Irene and Tropical Storm Lee. In total, almost 1,000 owner-occupied and renter occupied housing units were damaged in the county. Of these, over 500 were defined as low- and moderate-income households. These data were collected by the State over recent months and they combine data from FEMA and the Small Business Administration as

well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.[2]

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. In all, 120 loan applications were received by the Small Business Administration, of which 68.3% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

To demonstrate that this Most Impacted and Distressed area meets the Unmet Recovery Needs Threshold per the NOFA, the State is using data collected in the area of *economic revitalization.*

In this target area, the State can identify seven businesses in the NY Rising Small Business Recovery Program showing continued unmet recovery need with no source of funding available or indicated. This surpasses the minimum criteria of five businesses. Supporting documentation for these small businesses is provided as part of the State's supportive data. Supporting documentation indicates whether the business received a visit from a SBDC representative, went through an ECR or ERR Cat Ex A visit and/or AA visit. These businesses have all been verified with site visits and duplication of benefits assessments. They continue to have unmet construction, repair, machinery and equipment, and/or mitigation needs. If documentation is lacking for one of these businesses, the State conducted an additional

[2] Appendix B of APA8 is accessible through the following link: http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

windshield survey for the purpose of this Phase 1 application. Because each of the businesses identified have hit their cap as per the program policies and procedures, their unmet recovery needs currently have no source of funding. As such, this target area continues to have unmet recovery needs at the time of this Phase 1 application.

Nassau County

Most Impacted and Distressed

HUD has designated Nassau County as a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and Superstorm Sandy). In this Phase 1 application, the State designates the entire county as a target area.

Nassau County, situated on western portion of Long Island, was one of the most severely impacted counties as a result of Hurricane Irene and Superstorm Sandy. In APA8, the State estimated that over 50,000 housing units were damaged, including 6,000 severely damaged units in the 100-year flood plain. Of the 50,000 damaged units, over 21,700 were defined as low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over recent months; they combine data from FEMA and the Small Business Administration, as well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.[3]

[3] Appendix B of APA8 is accessible through the following link: http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. Over 23,000 small businesses were in a Census Block that received a foot or more of flooding; almost 7,000 were in the actual flood zone, as defined by APA8. In all, over 600 loan applications were received by the Small Business Administration, of which 53.8% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that this Most Impacted and Distressed County meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *infrastructure.*

In this application, the State is providing the FEMA Project Worksheet associated with the Vegetation Management Program on behalf of the Long Island Power Authority (LIPA), (HUD Matrix Code: 03-Other Public Facilities and Improvements; PW: PA-02-NY-4085-PW-00367(3)). Project worksheets (PWs), as well as the sources and uses statement, are provided as part of the State's supportive data.

LIPA's retail electric system provides electric service to over 1.1 million customers in Nassau and Suffolk counties and the Rockaway Peninsula in Queens. This customer base represents 99% of the total possible customers on Long Island. In the aftermath of Superstorm Sandy, thousands of those customers were left without power for weeks. All 12 of LIPA's substations on the South Shore of Long Island sustained flood damage.

After Superstorm Sandy, LIPA undertook substantial reconstruction and resilience efforts (e.g. storm hardening measures, including installation of flood prevention barriers, elevation of equipment and adjustments to switching systems etc.) The State, through GOSR, is providing an

$80 million match to FEMA's $1.4 billion in funds to upgrade LIPA's network. Planned improvements include a new outage management system and other technology upgrades to identify power outages and rapidly restore power. Funding will also be used to repair substations and electrical distribution systems.

However, LIPA also plans to spend $729 million of its total federal and State assistance and insurance proceeds on mitigation measures to protect against future storms, such as strengthening lines and elevating equipment. These additional unmet recovery needs require a local match in excess of $60 million. At present, no funding sources have been identified for addressing these needs. As such, this represents an unfunded unmet need well in excess of the $400,000 threshold required for Nassau County.

Schoharie County

Most Impacted and Distressed

HUD has designated Schoharie County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and the remnants of Tropical Storm Lee). For this Phase 1 application, the State designates the entire county as a target area.

Schoharie County, situated in the Mohawk Valley, was severely impacted by Hurricane Irene and Tropical Storm Lee. In APA8, the State estimated that nearly 1,200 housing units were damaged in the county. Of these damaged units, over 700 were defined as low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over recent months; they combine data from FEMA and the Small Business

Administration, as well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.[4]

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. In all, 120 loan applications were received by the Small Business Administration, of which 68.3% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that this Most Impacted and Distressed County meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *economic revitalization.*

In this target area, the State can identify eight businesses in the NY Rising Small Business Recovery Program showing continued unmet recovery need with no source of funding available or indicated. This surpasses the minimum criteria of five businesses. Supporting documentation for these small businesses is provided as part of the State's supportive data. Supporting documentation indicates whether the business received a visit from a SBDC representative, went through an ECR or ERR Cat Ex A visit and/or AA visit. If documentation is lacking for one of these businesses, the State conducted an additional windshield survey.

These businesses have all been verified through site visits and duplication of benefits assessments. They continue to have unmet construction, repair, machinery and equipment, and/or

[4] Appendix B of APA8 is accessible through the following link: http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

mitigation needs. However, because they have hit their cap as per the program policies and procedures, their unmet recovery needs currently have no source of funding. As such, this target area continues to have unmet recovery needs at the time of this application.

Suffolk County

Most Impacted and Distressed

HUD has designated Suffolk County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene, Superstorm Sandy, and severe winter storm and snowstorm from February 8, 2013 through February 9, 2013). In this Phase 1 application, the State designates the entire county as a target area.

Suffolk County, situated on the easternmost portion of Long Island, was one of the counties most heavily impacted by Hurricane Irene and Superstorm Sandy. In APA8, the State estimated that over 15,000 housing units were damaged, including 1,500 severely damaged units in the 100-year flood plain. Of these 15,000 damaged units, over 7,000 were defined as being occupied by low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over recent months; they combine data from FEMA and the Small Business Administration, as well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.[5]

[5]Appendix B of APA8 is accessible through the following link: http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. Almost 1,000 small businesses were in a census block that experienced a foot or more of flooding during Superstorm Sandy. In all, over 600 loan applications were received by the Small Business Administration, of which 53.8% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that Suffolk County meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *infrastructure.* As previously discussed in Nassau County's threshold narrative, the State is providing the FEMA Project Worksheet associated with the Vegetation Management Program on behalf of LIPA, which demonstrates an unmet recovery need of over $60 million, which is well in excess of the $400,000 threshold required for both Nassau and Suffolk Counties. See Nassau County subsection above for complete narrative. Supporting documentation through PWs as well as the sources and uses statement are provided as part of the State's supportive data.

Tioga County

Most Impacted and Distressed

HUD has designated Tioga County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (severe storms, flooding, tornadoes from April 26, 2011 through May 8, 2011 and the remnants of Tropical Storm Lee). In this Phase 1 application, the State designates the entire county as a target area.

Tioga County, situated in the Southern Tier of New York, was severely impacted by Tropical Storm Lee. In APA8, the State estimated that over 2,400 housing units were damaged in the county. Of these damaged units, over 1,100 were defined as being occupied by low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over recent months. They combine data from FEMA and the Small Business Administration, as well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.[6]

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. In all, 155 loan applications were received by the Small Business Administration, of which 45.8% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that this Most Impacted and Distressed County meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *economic revitalization.*

In this target area, the State has identified six businesses in the Small Business Recovery Program showing continued unmet recovery need with no source of funding available or indicated. This surpasses the minimum criteria of five businesses. Supporting documentation for

[6] Appendix B of APA8 is accessible through the following link: http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

these small businesses is provided as part of the State's supportive data. Supporting documents indicate whether the business in the target area received a visit from a SBDC representative, went through an ECR or ERR Cat Ex A visit and/or AA visit. If, documentation is lacking for one of these businesses, the State conducted an additional windshield survey.

These businesses have all been verified with site visits and duplication of benefits assessments. They continue to have unmet construction, repair, machinery and equipment, and/or mitigation needs. Because each business identified has hit its cap as per the program policies and procedures, its unmet recovery needs currently have no source of funding. As such, this target area continues to have unmet recovery needs at the time of this application.

Westchester County

Most Impacted and Distressed

HUD has designated Westchester County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and Superstorm Sandy). In this Phase 1 application, the State designates the entire county as a target area.

Westchester County, situated just north of New York City, was one of the most impacted counties as a result of Hurricane Irene and Superstorm Sandy. In APA8, the State estimated that nearly 3,000 housing units were damaged in the county. Of these damaged units, almost 1,200 were defined being occupied by low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over the last number of months; they combine data from FEMA and the Small Business Administration, as well as programmatic data

collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.[7]

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. Over 1,700 small businesses were in a Census Block with a foot or more of flooding and over 130 were in the flood zone, as defined in APA8. In all, 129 loan applications were received by the Small Business Administration, of which 70.5% were denied for various reasons, signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that this Most Impacted and Distressed County has continued unmet needs and meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *infrastructure.*

As a result of Hurricane Irene and Superstorm Sandy, Westchester County has incurred almost $4 million dollars in permanent damage (FEMA Categories C-G). PWs are provided as part of the State's supportive data. At present, no funding sources have been identified for addressing these needs. As such, this represents an unfunded unmet need of $592,000—well in excess of the $400,000 threshold required for Westchester County.

[7]Appendix B of APA8 is accessible through the following link: http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

New York City (Five Counties)

The State of New York and City of New York (City) have closely collaborated to identify and highlight the unmet recovery needs for all five counties of New York City (Bronx, Kings, New York, Queens, and Richmond). These counties were designated by HUD as Most Impacted and Distressed areas as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and Superstorm Sandy). In this Phase 1 application, the State designates all five counties as target areas. Given the collaboration between the State and City, the narrative outlined below, in fulfillment of the unmet recovery needs requirements of this competition, closely mirrors the language used in the City's Phase 1 NDRC application.

For the NDRC Phase 1 application purposes, the City is using data from the New York City Housing Authority (NYCHA) to demonstrate over $439 million in unmet recovery needs and data from the New York City Department of Housing Preservation and Development (HPD) to demonstrate a further $77.3 million in unmet recovery needs under the NDRC.

Along with the City, the State is submitting proof of these unmet needs as part of the State's supportive data.

Unmet Recovery Needs

In order to display that each of New York City's five counties have continued unmet needs and meets the Unmet Recovery Needs (URN) Threshold, the State is using data collected in the area of *housing.* For the purposes of the HUD NDRC Phase 1 application, the URN for housing for all five target areas totals $516.7 million (see file referenced above).

Public Housing

NYCHA is demonstrating over $439 million in combined URN across all five of the target areas (Bronx, Kings, New York, Queens, Richmond) as the result of Superstorm Sandy,

DR-4085.

These numbers are not intended to represent all of the City's or NYCHA's unmet needs, rather, just the ones identified for the purpose of supporting the NDRC Phase 1 MID-URN threshold requirement. Prior CDBG-DR funding allocations, together with other funding sources including, but not limited to, insurance, City, State, and FEMA funds ($3,454,883,000 – see NYCHA_8-Detailed_Accounting_by_Development) are inadequate for addressing remaining housing repair needs ($3,894,300,274 – see NYCHA_1-Overview-Costs_and_ Funding).

All of the NYCHA sites where URN has been identified are Sandy-damaged properties. NYCHA had over 400 buildings with over 35,000 residential units, housing nearly 80,000 residents affected by DR-4085. The sites and buildings were inundated with rain, experienced wind-born debris damage, storm surge and wide-spread power outages that left residents without critical elevator and trash compactor service. Hurricane Sandy posed a significant threat to the health and safety for NYCHA residents.

A critical element in NYCHA's recovery and the overall effort to preserve public housing, is to ensure that the infrastructure replaced, is replaced in a manner that reduces the risk of equipment damage in future storms and minimizes the impact on the City's most vulnerable populations. Although a combination of funding sources (FEMA PA, CDBG-DR and insurance both private and NFIP) have been identified to cover repairs and some mitigation measures (captured within the FEMA PWs), it is not enough to pay for additional resiliency measures identified herein as URN. These resiliency measures would provide back-up power for 179 buildings across 51 developments in Bronx County and fund surge/stormwater protection for 12 developments in Kings County, 16 developments in New York County, seven developments in Queens County and one development in Richmond County. NYCHA does not anticipate that any

of the existing FEMA, CDBG-DR or insurance funds will pay for the nearly $440 million of planned resiliency measures identified as URN. To show URN in each county, NYCHA has selected one FEMA PW from each county that details the scope of work being paid for by FEMA, insurance (including commercial and NFIP) and CDBG-DR. Correspondingly, the costs for the proposed resiliency measures are attached to prove that there is no scope/cost overlap between what is funded and what is being identified as URN.

NYCHA Supporting Document List

NYCHA_1-Overview-Costs_and_Funding: Overview of NYCHA DR-4085 repair estimates and identified funding (current as of January, 2015) for DR-4085 damages. Because the FEMA PWs are not final, neither costs nor funding numbers are final. $3,894,300, 274 costs identified, $3,454,883,000 funding identified, $439,417,274 identified URN.

NYCHA_2A-Bronx_FEMA_PW: Bronx County FEMA Project Worksheet (PW) #02848(0). This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/insurance/CDBG-DR and URN resiliency measures. This document includes an itemized list of the developments and building count (179) for each that are captured in the PW.

NYCHA_2B-Bronx_Resiliency_Costs: Bronx County building resiliency measures cost estimate identified as URN. This is a spreadsheet estimate of the costs associated with installing back-up power generators on the 179 buildings in the Bronx identified in NYCHA 2A. This estimate methodology is based on the total number of buildings identified in PW02848(0), using R S Means Costworks 1st Quarter 2015, using Union Labor Costs. These line items are assembly costs based on assemblies approved by FEMA for NYCHA estimating. The estimate was prepared by Cliff Thompson, CM PM, Certified Estimator working for CB&I.

NYCHA_3A-B: (A) Demonstrates an overview of estimates for costs to provide combination surge and stormwater protection systems for 34 NYCHA developments that sustained DR-4085 damages from storm surge flooding in Kings, New York, Queens and Richmond Counties. (B) Spreadsheet that shows a per/site breakdown of the resiliency feature costs for Kings, New York, Queens and Richmond Counties and a signed letter from Future Proof stating estimating qualifications and methodology. The estimate was prepared by Prisca Terven Weems, MArch, MSc, LEED AP, Managing Partner of Future Proof.

NYCHA_4A-Kings_FEMA_PW: Sample Kings County site FEMA PW - Coney Island Houses 4&5. This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/Insurance/CDBG-DR and URN resiliency measures.

NYCHA_4B-Kings_Resiliency_Costs: Sample Kings County site resiliency measures cost estimate identified as URN.

NYCHA_5A-New York County_FEMA_PW: Sample New York County site FEMA PW – Rangel Houses. This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/Insurance/CDBG-DR and URN resiliency measures.

NYCHA_5B-New_York_Resiliency_Costs: Sample New York County site resiliency measures cost estimate identified as URN.

NYCHA_6A-Queens_FEMA_PW: Sample Queens County site FEMA PW – Astoria Houses. This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/Insurance/CDBG-DR and URN resiliency measures.

NYCHA_6B-Queens_County_Resiliency_Costs: Sample Queens County site resiliency measures cost estimate identified as URN.

NYCHA_7A-Richmond_FEMA_PW: Sample Richmond County site FEMA PW – New Lane Houses. This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/Insurance/CDBG-DR and URN resiliency measures.

NYCHA_7B-Richmond_Resiliency_Costs: Sample Richmond County site resiliency measures cost estimate identified as URN.

NYCHA_8-Detailed_Accounting_by_Development: A breakdown by development of the DR-4085 repair estimates and identified funding (current as of January, 2015) for DR-4085 damages. Because the FEMA PWs are not final, neither costs nor funding numbers are final. These costs reflect those costs being captured in the FEMA PWs and do not include the proposed resiliency measures identified as URN.

Multi-Family Housing

For purposes of this Phase 1 application, the New York City Department of Housing Preservation and Development (HPD) is demonstrating $77.3 million in URN, and is submitting proof of URN for the MID designated counties of New York City (see "New York City Supporting Data" file referenced above).

In the aftermath of Superstorm Sandy, the City developed the Multi-Family Build it Back (BiB) Repair Program to address multi-family buildings in the 100-year floodplain that were in need of storm-related repairs and vulnerable to future storm events. The BiB Repair Program addresses limited resiliency retrofits such as raising electrical equipment where feasible, but it is not structured to pursue comprehensive resiliency assessments and scopes of work such as flood-proofing or installing redundant building systems, which require more complex analysis from engineers and technical experts.

To address this gap in resources for multi-family resiliency and protection measures, the City's CDBG-DR Action Plan includes the Residential Building Mitigation Program (RBMP), which allocates $60 million for comprehensive resiliency retrofit measures necessary to protect vulnerable residents from loss of critical building services in the event of a storm. However, the RBMP does not provide adequate funding to benefit all vulnerable, majority low- and moderate-income (LMI) buildings in the 100-year floodplain. BiB has identified a total of 133 multi-family buildings housing primarily LMI residents (66%) as candidates for comprehensive resiliency retrofits. Based on current data, the existing $60 million in CDBG-DR funding allocated to BiB resiliency retrofits is expected to serve approximately 38 of the 133 buildings. These 38 buildings are all classified as majority-LMI. Using current cost projections for resiliency retrofits based on building size, we estimate that an additional $77.3 million is required to fund comprehensive retrofits for the remaining 95 buildings housing LMI residents. Because most of the 95 buildings targeted for the additional $77.3 million are smaller in size than those to be served by the existing $60 million, less funding is required per building for retrofit measures.

Exhibit C Capacity
New York State
ExhibitCCapacity_NYS.pdf

Introduction

New York State is proposing a regional approach to resilience that addresses the threats and hazards faced by riverine and coastal communities and responds to the intertwined physical, social, economic, and environment resilience needs of the communities. The approach is regional and cross-cutting because systems, such as watersheds, transcend municipal boundaries and policy silos. The Governor's Office of Storm Recovery (GOSR) is particularly well-positioned to lead this effort as it is currently leading and coordinating the State's recovery and rebuilding efforts. GOSR's work combines a local delivery focus with regional scale, addressing cross-sectional resilience issues. As the Agency's recovery and rebuilding work advances, it is increasingly apparent that a regional, cross-sectional focus must be embraced to truly address the State's unmet recovery needs. This regional approach demands in-depth and meaningful engagement from stakeholders all over the State. GOSR's capacity to engage state agencies, public and private partners, and community stakeholders has been clearly demonstrated in the Agency's past and current work and the Agency intends to similarly engage diverse partners in this effort.

General Management Capacity

GOSR is spearheading the development of this Phase 1 NDRC application and is well-positioned and well-staffed to manage any additional disaster recovery funding received from HUD. In June 2013, Governor Andrew M. Cuomo established GOSR to maximize the coordination of federally funded recovery and resilience efforts in storm-affected areas throughout New York State. GOSR manages the State's $4.4 billion allocation of Community Disaster Block Grant – Disaster Recovery (CDBG-DR) funding authorized by the Disaster Relief Appropriations Act, 2013 (Public Law 113-2, approved January 29, 2013), administering a

variety of programs relating to housing recovery, economic development, infrastructure, and community reconstruction in disaster-impacted areas. Formed under the auspices of the New York State Housing Trust Fund Corporation, a public benefit corporation and subsidiary agency of New York State Homes and Community Renewal, GOSR has demonstrated proficiency in disbursing CDBG-DR dollars in a timely, compliant manner.

GOSR has gleaned valuable experience from the development and administration of recovery programs and is fully prepared to implement additional resiliency programs and projects. GOSR possesses the requisite financial management, project management, and leadership capacity to successfully develop the NDRC application and to shepherd the implementation of subsequent projects. The Agency consists of more than 120 full-time staff, manages an array of contractors, operates financial and procurement systems that are compliant with all State and federal requirements, and has put in place fully functioning quality assurance, quality control, and internal control systems. Additionally, according the requirements of the Disaster Relief Appropriations Act, 2013 (Public Law 113-2), the State has submitted and continues to update as needed the Certification of Proficient Controls, Processes, and Procedures to HUD, which certify to the Agency's ability to properly manage federal funds.

GOSR has established several models for expeditious project implementation—from utilizing directly-procured vendors to entering into subrecipient agreements with eligible agency, municipal, and non-profit partners. In the NDRC and in the State's ongoing recovery efforts, GOSR is prepared to leverage its institutional knowledge and spearhead implementation of additional recovery and resilience projects, developing innovative financing strategies that streamline recovery at the local level and maximize available CDBG-DR funds. GOSR has experience in utilizing its own staff and contractors to design and plan ambitious regional-level

projects and is not directly dependent on partners for those services. GOSR's staff has extensive experience in developing programs to meet and exceed various diversity requirements (M/WBE, EEO, Section 3, etc.), as well as in working with quantitative data to analyze racial and economic disparities.

Moreover, since its establishment, GOSR has been working collaboratively with community stakeholders in storm-impacted communities to understand damage, respond to unmet needs, and anticipate future threats. Tailored and robust stakeholder engagement is the foundation upon which each of the State's recovery programs is built. For example, the NY Rising Small Business Recovery Program utilizes the previously mentioned Small Business Development Center network; the NY Rising Housing Recovery Program utilizes the Long Island Housing Partners; the NY Rising Infrastructure Program, which includes the implementation of two Rebuild by Design projects, utilizes the unique, multi-sector partnerships established in the Rebuild by Design planning process; and the NY Rising Community Reconstruction (NYRCR) Program establishes an ambitious, scalable, and replicable model for citizen empowerment in the recovery and resiliency planning process.

This application has been prepared by GOSR staff, after extensive collaboration with state agencies, county governments, and other stakeholders.

Cross-Disciplinary Technical Capacity

In the continued administration of the State's recovery programs, GOSR has engaged a variety of expert partners—many of whom were integral to the development of this Phase 1 application—and can be called upon to successfully develop and implement innovative resilience solutions in Phase 2 and beyond. As discussed further in Exhibit E (pages 56-61) and Attachment D (pages 96-111), for the express purpose of preparing this Phase 1 application,

GOSR rolled out a targeted strategy to engage the following stakeholder groups within the State: select state agencies (through a newly established NDRC Interagency Working Group); NDRC Most Impacted and Distressed counties; NDRC Declared counties; Tribal Areas within HUD NDRC Most Impacted and Distressed and Declared counties; potential non-governmental organization partners; and the general public. The NDRC Interagency Working Group brings substantial capacity and technical expertise to bear. Areas of expertise include planning and coastal planning; Brownfield redevelopment; economic revitalization (Department of State (DOS)); environmental science and planning (Department of Environmental Conservation (DEC)); utilities (New York Power Authority (NYPA), New York State Energy Research and Development Authority (NYSERDA), Environmental Facilities Corporation (EFC)); economic development and capital projects management (Empire State Development Corporation (ESDC)); emergency management and hazard mitigation (Division of Homeland Security and Emergency Services (DHSES)); and transportation (Department of Transportation (DOT), Metropolitan Transportation Authority (MTA), Port Authority of New York and New Jersey (PANYNJ)). Like GOSR, many of these agencies have experience in data analysis; community engagement; design and engineering; and delivering large, complex projects across multiple jurisdictions.

In addition to extensively collaborating with state agencies in this Phase 1 application, GOSR has extensive experience working with state agency partners in its day-to-day recovery and rebuilding work. For example, GOSR partners with DHSES to deliver resilient recovery projects through the Federal Emergency Management Agency Public Assistance (PA) program and Hazard Mitigation Grant Program (HMGP). All funds through these programs in the State are disbursed through DHSES. In many cases, GOSR partners with DHSES to provide local

match funding using CDBG-DR funds both for projects implemented by state agencies and for projects implemented by local governments and non-profit organizations. Examples of such projects include the Bay Park Sewage Treatment Plant in Nassau County—one of the largest PA project in FEMA's history—and the HMGP funded DOT effort to improve the resiliency of 105 bridges around New York State.

Both GOSR and its parent agency, New York State Homes and Community Renewal (HCR), have extensive experience working with civil rights and fair housing issues including data analysis and HUD reporting to address racial or economic disparities. Should the State advance to Phase 2 of the NDRC, GOSR may develop formal partnerships with non-governmental organizations to advance recovery and resiliency partnerships, and to address issues of equity and environmental and social justice, especially as it relates to vulnerable populations. Exhibit E (pages 56-61) and Attachment D (pages 96-111) have additional information on stakeholder consultation.

GOSR and its partner agencies have extensive experience in area-wide and comprehensive planning, which has informed the systems-based approach to resilient recovery outlined in this application. GOSR's NYRCR Program included a planning phase that entailed the development of 66 community resiliency plans through an innovative participatory process. That effort was accomplished through the extensive contributions of the DOS's Office of Planning and Development, which has experience in the fields of coastal and riverine planning and has worked to develop models for planning which incorporate rigorous, science-based predictions of the effects of climate change such as sea-level rise. In addition to DOS's work, under New York State's Community Risk and Resiliency Act (CRRA), DEC is developing richer estimates of sea-level rise, improving the State's ability to assess and address possible future

conditions and risks and reducing uncertainty around "known unknowns." As noted in Exhibit D (pages 48-49), the New York State Resiliency Institute for Storms and Emergencies (RISE) is also working with GOSR throughout the Agency's rebuilding and recovery efforts to provide data-driven predictive models and data for the Agency.

GOSR and its partner agencies are extremely experienced in innovating and implementing cutting-edge resilience design. For instance, the State's two Rebuild by Design projects are prime examples of innovative resilience design thinking incorporating the needs of riverine and coastal communities living with water. In the projects' development stages, GOSR worked closely with and advised both design teams and GOSR is leading the implementation of both of these innovative projects.

GOSR is also experienced in performing cost- and price-analyses to determine the cost-reasonableness and cost-benefit ratio of projects and actions in compliance with federal regulations. Many NDRC Interagency Working Group members are also familiar with different forms of cost-benefit analysis, including the FEMA and Federal Department of Transportation Benefit Cost Analyses (DHSES, DOT, MTA, PANYNJ).

The state agency partnerships discussed in detail here augment the capacity already evident in GOSR actions to introduce resiliency measures at a local, regional, and State level.

Community Engagement Capacity

In addition to maintaining and cultivating productive relationships with state agencies, GOSR has significant capacity and experience in community engagement. The Agency has placed particular emphasis on engaging State residents in its recovery and rebuilding efforts, with a strong focus on those most impacted by past disasters and those most vulnerable to future threats. The New York State Citizen Participation Plan (CPP) sets the framework for public

engagement in the planning, implementation, and assessment of the State's CDBG-DR recovery program. The State's CPP seeks to engage low- and moderate-income individuals, individuals with limited English proficiency, and the elderly. Moreover, in addition to the community stakeholder engagement that informs all of the agency's efforts, two of GOSR's programs were specifically designed to directly engage community members in storm impacted localities in their recovery, rebuilding, and resilience: the NYRCR Program and the Rebuild by Design Program. These efforts offer replicable and scalable engagement and consultation models; they have already created extensive stakeholder networks that can leveraged in the development and implementation of NDRC projects when the time comes.

The NYRCR Program encompasses 124 communities across the State with more than 600 New Yorkers representing their communities by serving on Planning Committees. There were over 600 Planning Committee meetings held throughout the program, and an additional 250 public engagement meetings that attracted thousands of community members. Planning Committees members also conducted outreach to populations traditionally under-represented in community planning processes, from immigrant populations to high school students. Planning Committee members made presentations at senior housing complexes, religious gatherings, schools, and at chambers of commerce. As projects in the communities begin to be developed, this high level of public outreach will continue, at both at the Planning Committee level and at the broader public level.

A broad-based public engagement process was also integral in developing the State's two Rebuild by Design projects: *Living with the Bay* in Nassau County and *Living Breakwaters* in Staten Island. As outlined in Action Plan Amendment 8, the State plans to continue this level of engagement as the projects move into development.

GOSR's state agency partners bolster GOSR's capacity to engage stakeholders by bringing additional subject matter expertise, regional perspectives, and connections to on-the-ground organizations.

In accordance with the requirements of the NDRC NOFA, GOSR held a 15-day public comment period, including the hosting of one public hearing which took place on March 16, 2015. In accordance with the NOFA, GOSR published parts of this application on GOSR's website with an associated online comment/feedback form to allow for prompt responses. In addition, GOSR provided hard copies free of charge to anyone requesting one via email, phone, and/or TTY. In publicizing the comment period and associated hearing, GOSR utilized both formal and informal networks (e.g. legal notices in various media, and via email) to notify stakeholders about the opportunity to comment. GOSR has addressed and incorporated, as appropriate, all relevant feedback into the State's final Phase 1 application submission.

Should the State be invited to continue to Phase 2, GOSR's approach to stakeholder involvement in its Phase 2 application will be consistent with the inclusive and extensive approach taken throughout the recovery and rebuilding process to date and through the Phase 1 application process. Stakeholder feedback is not only solicited at key points in GOSR's process (e.g. during a public comment period for the State's Action Plan), but also given informally, on a day-to-day basis (e.g. homeowners contacting the Housing Program and the Housing Program responding or conducting a survey of homeowners), as well as through programs designed with public participation at their forefront (i.e. the NYRCR Program and Rebuild by Design). The State will provide opportunities for the public to be directly engaged in its Phase 2 application including online and in-person public comment opportunities. The State is considering holding public information sessions on its Phase 2 application prior to the public comment period. The

objective of these meetings would be to solicit additional feedback from communities in shaping the State's application and ensuring that it is responsive to the needs of populations recovering from past disasters and vulnerable to future threats, including those resulting from climate change. These events will also be a continuation of the State's ongoing efforts to identify and quantify remaining unmet needs associated with the qualified disasters.

Should the State's NDRC projects move into implementation, in-depth public participation will be similarly sought. This approach is consistent with GOSR's plans for public engagement in its existing programs. For example, the State's Action Plan Eight (APA8) outlined a robust CPP for the implementation of its two Rebuild by Design projects, including the establishment of a Citizens Advisory Council, additional public meetings, and online components. GOSR is also developing a replicable and scalable menu of options to continue its in-depth model of community involvement into the NYRCR project implementation process; GOSR will look to this menu as any proposed NDRC projects move into implementation.

Through its NYRCR Program, GOSR has extensive experience working with and empowering formal and informal community leaders in the planning and execution of resilient recovery and rebuilding projects; including those from vulnerable populations. Members of the NYRCR Program's Planning Committees were identified by GOSR staff and other stakeholders and included leaders in civic associations, business groups, non-profits, and members of vulnerable populations. Committee members were iteratively chosen with an eye toward creating Committees representative of the community as a whole, and issues of geography, diversity, and the necessity to ensure the participation of historically disengaged groups. Throughout the planning process, NYRCR Program staff worked with each Planning Committee member on a continual basis. Planning Committees in each community were responsible for developing the

community's NYRCR Plan, which details recovery and resilience projects geared towards the community's needs. The Planning Committees also exemplify the State's ability to harmonize the contributions of diverse stakeholders in the consultation process.

Regional or Multi-Governmental Capacity

In the NDRC and in its ongoing recovery and rebuilding work, the State plans to address threats and hazards faced by riverine and coastal communities at a regional, multi-layered level. For example, as highlighted in APA8, some of the State's wastewater-treatment infrastructure is unprepared to handle severe storms. This inability results in negative impacts in the municipality in which the infrastructure is located. It also causes environmental degradation in the waterways of nearby municipalities: during severe weather events, nitrogen from wastewater treatment plants runs into, and pollutes, State waterways. This environmental degradation can lead to a loss of natural resiliency, which further threatens communities. The State's Department of Environmental Conservation compellingly demonstrates this in "Nitrogen Pollution and Adverse Impacts on Resilient Tidal Marshlands":

> Excessive europhiciation due to nitrogen loadings cause marsh grass along tidal creeks and bay coasts to initially become greener and grow taller in a manner similar to the effects of fertilizing a lawn. The tall marsh grasses, however, produce fewer roots [. . .]. The poorly rooted grasses eventually grow too tall and then fall over, thereby destabilizing the creek-edge and bay-edge marsh, causing it to slump and exposing soils to erosive forces. The destabilization [. . .] makes these areas much more susceptible to the constant tugging and pulling of waves, accelerating erosion and the ultimate loss of stabilizing vegetation. This process results in the loss of the naturally resilient coastal barrier marshes—a barrier that

protects shoreline communities from major storm surges and wave action along coastal areas.[8]

As described above, *only* committing to a local solution— addressing the infrastructure need *without* undertaking environmental cleanup and additional coastal protection for shoreline communities *or* adding protection to shoreline communities but not addressing the infrastructure needs—would ignore the complexity and interrelatedness of the problem.

Understanding the necessity and value of regional collaboration for the NDRC, the State has consulted with both the City of New York and the State of New Jersey to develop this Phase 1 application. The City and State of New York maintain a critically productive working relationship in the administration of recovery programs. In particular, the City is a subrecipient to the State and will work with local NYRCR Planning Committees to implement several projects developed through the NYRCR Program. The State and City also coordinate closely to ensure alignment of the State's Acquisition for Redevelopment program. The City's Phase 1 application approach to serve vulnerable coastal communities throughout the five boroughs aligns with the State's larger approach to ensure the development of resilient built and natural systems throughout the State.

The State will continue to coordinate with the City of New York and State of New Jersey to advance synergistic Phase 2 approaches that may include the advancement of specific projects, partnerships, or funding schemes.

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[8] "Nitrogen Pollution and Adverse Impacts on Resilient Tidal Marshlands. NYS DEC Technical Briefing Summary." NYS DEC. April 22, 2014. (2.)

There are many benefits to developing comprehensive regional solutions rather than siloed, one-off solutions. Regional solutions protect more people, are often more practical, and may prove to be more cost effective for the State, all of which are co-benefits. Importantly, regional solutions respond to negative externalities often ignored by one-off solutions. Addressing these externalities will help to combat inequality, as externalities, like pollution, often impact those most socially and economically vulnerable.

There are many examples of best practices in regional thinking. One of these is New York State's Regional Economic Development Councils (REDCs). The State's ten REDCs are comprised of local public, private, and academic experts working in a particular region. Each REDC creates an economic development plan and implementation agenda that emphasizes the economic strengths of the area. Each REDC applies for project funding through the Consolidated Funding Application (CFA). The CFA now features scoring components to reward the inclusion of resilience measures in a grant application. GOSR has worked with REDCs to secure additional funding for projects highlighted in NYRCR Plans. Thus far, 24 NYRCR projects will receive more than $11.6 million in funding, across six REDCs: Mohawk Valley, Southern Tier, Mid-Hudson, Capital District, North Country, and Long Island.

As directed by HUD, at this stage in the application process, the State is not proposing specific projects. However, in addition to GOSR, there are many state agencies as well as inter-state agencies, such as the NDRC Interagency Working Group, that are extremely capable leaders in developing and implementing regional approaches to resilience.

Exhibit D Need
New York State
ExhibitDNeed_NYS.pdf

Narrative Summary

On October 29, 2012, the largest storm in New York's recorded history swept ashore. Superstorm Sandy's impact was devastating, causing widespread damage to residents, homes, businesses, core infrastructure, government property, and an economy just recovering from the recent financial crisis. Fourteen counties were declared Federal Disaster Areas. Two million utility customers lost power, with some blackouts lasting up to three weeks. The storm damaged or destroyed more than 164,342 housing units, affected or closed over 2,000 miles of roads, produced catastrophic flooding in subways and tunnels, and damaged major power transmission systems.

Superstorm Sandy's impact was particularly tragic coming on the heels of Hurricane Irene and Tropical Storm Lee, which in 2011 devastated many communities in upstate New York's Catskill, Adirondack, and Hudson Valley regions, and caused severe damage on Long Island. Tens of thousands of homes incurred damage in these three storms, and many were destroyed by flood waters and wind. Businesses and infrastructure suffered substantial damage as well. Appendix B of the NDRC NOFA outlines disaster declarations by county and declaration type for all storms between 2011 and 2013.

In addition to the widespread and deep destruction, the storms of 2011 through 2013 left a realization of New York State's vulnerability to the interrelated effects of climate change and extreme weather. The State has responded to the destruction caused by these events with an extensive recovery and rebuilding response, detailed in Exhibit C (pages 31-33). However, as Exhibit B makes clear (pages 12-29), there are remaining unmet recovery needs across the State. In Action Plan Amendment Eight (APA8), the State has calculated $17.80 billion in unmet recovery needs statewide, and that State's NDRC-specific analysis identified economic

revitalization, infrastructure, or housing unmet recovery needs in the following 11 counties designated by HUD as Most Impacted and Distressed: Greene, Nassau, Schoharie, Suffolk, Tioga, Westchester, and the five counties of New York City. As the State continues its recovery and rebuilding, it will pursue a systems-based approach to address the effects of climate change induced floods on riverine and coastal communities. GOSR's systems-based approach outlined in this Phase 1 application hinges upon identifying strategies that will simultaneously improve the physical, social, economic, and environment resilience of these communities. As discussed further below, a comprehensive and science-based risk approach has been—and will continue to be—central to New York State's identification and implementation of recovery and rebuilding projects and programs.

Threats, Hazards, Vulnerabilities

New York State is focusing on the effects of flooding in riverine and coastal communities caused or exacerbated by climate change. These threats, hazards, and vulnerabilities arise from both shocks (one-time events) and stressors (continued events). In both instances, they often have broad, impacts that cross jurisdictional boundaries and so must be addressed with systems-based, regional solutions.

These threats, hazards and vulnerabilities were found through a series of analyses initiated in the wake of Superstorm Sandy and in preparation for this Phase 1 NDCR application:

- The Governor's Office of Storm Recovery (GOSR) conducted significant outreach—detailed in Exhibit E (56-61) and Attachment D (pages 96-111)—to New York's counties, state agencies, and other stakeholders to better shape its understanding of vulnerabilities for this Phase 1 NDRC application.

- GOSR's NY Rising Community Reconstruction (NYRCR) Program formed and supported citizen Planning Committees through an intensive, months-long recovery and resiliency planning process culminating in 66 NYRCR Plans. This grassroots program helped shape the State's understanding of hazards, risks, and vulnerabilities.
- The New York State Department of State (DOS) developed a risk analysis tool for use in the NYRCR Program. The DOS model incorporates predictions of sea level rise and the probability of different storm hazard levels, and analyzes the likelihood that an infrastructure asset will be exposed to various levels of storm hazards in the one-hundred year planning time frame. NYRCR Plans posted for public review on the GOSR website illustrate the model's utility in a wide range of project and program settings.
- In Action Plan Amendment Eight (APA8), GOSR revisited the State's unmet recovery needs analysis. The concentration of the State's needs in coastal and riverine communities has helped shape this application's approach, and the specific types of needs identified will help to guide project development should the State advance to Phase 2 of the NDRC. Following HUD's CDBG-DR Allocation Methodology as published in the Federal Register Notice FR-5696-N-11, the State estimated approximately $5.68 billion in unmet needs to repair and mitigate the State's housing, business, and infrastructure as a result of the covered disasters. If HUD's high construction cost multiplier is factored in, unmet needs are estimated at $6.85 billion, reflecting the likelihood that reconstruction costs

> will be higher in New York State than elsewhere in the United States.[9] The State's additional analysis methodology, which incorporates infrastructure needs that may not be eligible for CDBG-DR funding, estimates approximately $17.8 billion in outstanding recovery and mitigation needs not currently funded by federal programs (if the HUD construction cost multiplier is applied to housing and small business).

Residents and businesses that have been subjected to repetitive flooding are most directly impacted by the threats discussed above, although the impacts of catastrophic flooding—including social and economic impacts—have adversely affected entire communities and, in fact, the entirety of New York State. As is discussed below, a significant number of low- and moderate-income (LMI) individuals have been affected by past disasters in New York State. LMI communities and otherwise vulnerable populations face increasingly severe physical, social, economic, and environmental impacts of coastal and riverine flooding.

Best Available Data

GOSR has utilized federal government data from the Federal Emergency Management Agency (FEMA), Small Business Administration (SBA), Federal Transit Administration (FTA), Federal Highway Administration (FHWA), U.S. Army Corps of Engineers (USACE), U.S. Department of Agriculture (USDA), and others. These data are the basis of funding allocations provided by HUD. However, as HUD asserts in the NOFA, some of these data sources are now

[9] Federal Register Notice (FR-5696-N-11) indicates that HUD employs a high construction cost multiplier in its updated CDBG-DR allocation methodology. In the case of New York State, housing and small business unmet needs are multiplied by a factor of 1.44.

out of date. As a result, the State has supplemented these data with other data detailing both the impact of recent disasters on New York's communities and the future impact of climate change on the State.

To utilize the best available data as required by the NOFA, the State has used the analysis detailed above, as well as relied on the following data-driven efforts in developing its systems-based approach to resiliency:

- Following Superstorm Sandy, New York State launched a series of blue-ribbon panels to study the State's vulnerabilities, including the New York State (NYS) 2100 Commission[10], the NYS Ready Commission[11], and the NYS Respond Commission[12]. These panels, staffed by top-experts, studied challenges and made proposals to increase the resiliency of the State.
- The New York State Hazard Mitigation Plan, which includes a risk-assessment characterizing and analyzing risks and hazard facing the State to help guide investments in mitigation measures, was updated in 2014 to focus on the most prominent 15 natural hazards, including climate change, coastal erosion, extreme temperatures, flood, hurricane, and land subsidence/expansive soils.
- The New York State Resiliency Institute for Storms and Emergencies (RISE), a consortium of New York's higher education institutions, which act as a hub for

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10 http://www.governor.ny.gov/sites/governor.ny.gov/files/archive/assets/documents/NYS2100.pdf

11 http://programs.governor.ny.gov/NYSReadyCommission

12 http://programs.governor.ny.gov/NYSRespondCommission

cutting-edge research on climate science, storm preparedness, and mitigation, developed a science-based comprehensive risk analysis with support from GOSR to guide the State in determining which infrastructure projects to implement. RISE scientists analyzed forecasts of coastal and inland flooding from storm surge and sea level rise and severe weather events, and used advanced climate models to predict sea level rise and future storm intensity.

Comprehensive Risk Approach to Analyzing Need

New York State has faced, and continues to face, the threat of severe coastal and riverine flooding as a result of sea-level rise and increasingly frequent extreme weather events, both linked to climate change. GOSR has utilized scientific projections of climate change, alongside analysis of demographic and economic trends, to identify and focus on the threats facing the State's most vulnerable communities. Some of those efforts, although not an exhaustive list, are detailed in this Exhibit. These studies indicate that New York State is at a very high risk of continued exposure to coastal and riverine flooding.

While the science-based predictive models employed by the State have demonstrated that sea-level rise and increasingly frequent extreme weather will continue to pose major threats, the extent to which each of these conditions will increase over time is not known with certainty. While some of the impacts of these conditions on communities—specifically, flooding and flooding-related impacts—are well known, the full scope of the impacts of these threats over time is unknown. A critical element of the State's systems-based approach will be continuing to utilize rigorously and methodologically sound approaches, like those developed by RISE, to resolve these unanswered questions.

Insurance

It is difficult to capture with certainty the number of buildings and improvements in the State that are un-insured or under-insured against flooding and other risks associated with sea level rise and increased incidence of extreme weather events. According to FEMA's *Region II Hurricane Season Fact Sheet—Summer 2012*, as of summer 2012, there were 84,758 flood-insurance policies in high-risk areas in the State. The number of structures and other improvements in the State likely exceeds this number by some margin. The universe of uninsured buildings and improvements includes those that are not required to carry flood insurance: residential and commercial buildings without mortgages, public buildings that have never benefited from federal disaster assistance, and structures that are not eligible for flood insurance coverage. It also includes structures which must, under federal law, be insured and which are uninsured and out of compliance, either because the owner is unaware of the requirement or unable to afford coverage.

It is also difficult to estimate with any certainty the number of structures that require flood insurance because they have received federal disaster assistance, but are uninsured. That said, of the 1,534 applicants that received CDBG-DR assistance for either Hurricane Irene or Tropical Storm Lee, 935 sought assistance for damage connected to Superstorm Sandy—and 186, or roughly 20 percent, were deemed non-complaint with their flood-insurance requirement. This number may or not be reflective of the larger universe of (FEMA-IA) recipients, from Irene, Lee, or other Declared Disaster events statewide, who are required to carry flood insurance but may not.

Insurance can pay an important role in a systems-based approach to resiliency by protecting against those residual risks that cannot be eliminated through adaptive grey and green flood protection, environmental remediation, elevations, buyouts, etc. The shortfall in flood

insurance in high-risk areas has limited and will limit the resiliency of the State's communities because it inhibits the ability to rebuild quickly after an event.

The primary factor limiting the purchase and maintenance of flood insurance, both by those who are required to carry it and those who otherwise should, is cost. Elevation, flood proofing, and community participation in the Community Rating System may reduce those costs and encourage higher levels of participation. These activities, and others that reduce the risk to communities, are part of New York's systems-based resiliency approach.

Benefits of Addressing Threats and Hazards Related to Vulnerabilities

As detailed above, New York's recent analysis, conducted as part of APA8, revealed significant unmet recovery needs in the areas of housing, economic revitalization, and infrastructure in the State's coastal and riverine communities. The State's systems-based approach is focused on resiliency efforts that will be closely integrated into recovery investments in these sectors to ensure a long-term resilient recovery.

The State has made, and will continue to make, significant investments in the recovery of communities affected by coastal and riverine flooding. Where possible, these recovery investments are supplemented by efforts to build back better, with allowances for resiliency measures, including flood-proofing and elevation. Additional investments in resiliency supported by the NDRC could help to further protect these existing investments, and also to support and sustain the ongoing social and economic recovery of impacted communities.

Current Risks to Vulnerable Populations

The most severe impacts of coastal and riverine flooding are often felt by already-vulnerable communities and individuals: with low- and moderate-income, limited English proficiency, functional needs, the elderly, or the isolated—often individuals and communities

that have fewer resources to cope with stresses and shocks. Analysis conducted as part of the APA8 unmet needs analysis found that low- and moderate-income households were significantly impacted by the Qualified Disasters. This was particularly true of renters; the State estimated that over 74.5% of all rental units impacted by the storms were occupied by low- and moderate-income households. For rental units with major to severe damage the low- and moderate-income household proportion was 74%. Understanding the significant impact that disasters have on this population, the State will continue to utilize recovery resources to strengthen this population's resilience.

Functional Needs

The State firmly believes that any systems-based resiliency strategy should focus on delivering solutions that benefit those with functional needs. For instance, many homeowners impacted by the storms and living in the 100-year floodplain are pursuing resiliency measures such as home elevation, the use of flood resistant materials, bulkhead repairs, and other construction techniques that mitigate the impacts of future flooding. The State has worked together with FEMA as well as with public housing authorities throughout the recovery process, and will continue to engage these stakeholders as a commitment to meeting functional needs.

Opportunities and Existing Conditions in Current and Future Rebuilding and Recovery Work

New York State has already taken the opportunity to address the vulnerabilities profiled above through programming current and future investments in a way that will increase resiliency and foster economic revitalization in vulnerable communities. Examples include the NYRCR Program, which incorporated grassroots, community-driven planning; the Community Risk and Resiliency Act (CRRA), which requires state agencies to take climate change into account in their permitting and programming decisions and which calls upon state agencies to develop sea-

level rise projections and model laws to help local governments incorporate resiliency into their local decision-making; and the Regional Economic Development Councils' Consolidated Funding Application, through which the State has allocated grant funding, including economic development funding, to resiliency projects in storm-affected communities.

Building upon this work, the NDRC represents an opportunity for the State to further operationalize resiliency and to continue to develop its systematic approach to resiliency by proposing solutions that will simultaneously protect communities from the physical impacts of flooding, while generating social, environmental, and economic co-benefits.

Many of New York's communities are clustered on the coast or on the banks of rivers and streams. The impacts of coastal and riverine flooding threaten not only the health and well-being of State's communities, but also the State's overall economy. The New York State Energy Research and Development Authority's *ClimAID* report, published in 2011, estimated that the economic impact of climate change to the State, without adaptation, will rise to $3.8-7.5 billion annually by the middle of this century. [13]

As discussed in Exhibit C (pages 40-41), environmental degradation—specifically, nitrogen loading—adversely affects coastal and riverine ecosystems and exacerbates vulnerability to flooding. The State has already made significant efforts to address nitrogen loading, including improvements to wastewater treatment facilities on Long Island in the wake of

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[13] Leichenko, Robin, David C. Major, Katie Johnson, Lesley Patrick, and Megan O'Grady."An Economic Analysis of Climate Change Impacts and Adaptions in New York State." *ClimAID Annex III* from *Responding to Climate Change in New York State.* NYSERDA. < http://www.nyserda.ny.gov/climaid>.

Superstorm Sandy, but further efforts are necessary. Mitigating levels of nitrogen in New York's coastal and riverine ecosystems will be a critical element of the State's systems-based approach to resiliency.

New York State's significant ongoing efforts to recover from the impacts of coastal and riverine flooding are detailed throughout this application, in particular in Exhibit G (pages 74-77). They include significant investments of state and federal funds, and statutory and regulatory mechanisms intended to guide state and local decision-making to reduce vulnerability. The extraordinary scale of New York's vulnerability to coastal and riverine flooding means that the State must continue to develop systems-based strategies that leverage all available resources and generate the maximum benefits relative to investment. Should the State advance to Phase 2 of the NDRC, GOSR and its partners will advance projects that will help bridge this gap.

Exhibit E Soundness of Approach
New York State
ExhibitESoundApp_NYS.pdf

Consultation

Since its inception, the Governor's Office of Storm Recovery (GOSR) has been committed to ensuring that all impacted populations are aware of, and given the opportunity to participate in, the State's recovery and resilience programs. GOSR continues to leverage an expansive website platform; an integrated social media presence; traditional media in local, regional, and national markets; briefings with elected officials, municipal partners, and community advocacy groups; large scale public hearings; and frequent technical assistance sessions with program applicants and project implementation partners. As such, GOSR has established robust formal and informal stakeholder networks across sectors, needs, and geographies, which the State will leverage and build upon in Phase 2 of the NDRC. These stakeholder networks have been engaged throughout the recovery process, and the State has proactively consulted with a targeted subset of these networks for the development of the Phase 1 NDRC application. As discussed in Exhibit C, the NY Rising Community Reconstruction (NYRCR) Program has developed an extensive community stakeholder network, both through its Planning Committees and public engagement events (pages 33-40). This Program presents a scalable, replicable model for the deep systematic engagement of all community stakeholders as well as vulnerable populations. In addition, the NY Rising Infrastructure Program has held over 100 technical assistance meetings in ten months for FEMA-Public Assistance funds. The NY Rising Housing Recovery Program has established a strong partnership with the Long Island Housing Partners, which conducts case-referrals, outreach, and case-specific coordination with Social Services Block Grant (SSBG) funded Disaster Case Management firms, and also encompasses subrecipient agreements with pro-bono legal firms who provide support to vulnerable homeowners in need of special assistance in the rebuilding process. Also outlined in

Exhibit C (pages 36-40), these outreach efforts align with the State's Citizen Participation Plan (CPP), which endeavors to provide citizens with an opportunity to participate in the planning, implementation, and assessment of the State's CDBG-DR recovery programs.

The Phase 1 Framing Phase of this application, which constitutes a rigorous unmet recovery needs analysis, necessitates the targeted engagement of key stakeholders poised to contribute appropriate data and to identify funding sources, partnerships, and strategies that can be leveraged and developed in Phase 2.

For the express purpose of preparing this Phase 1 NDRC application, GOSR rolled out a targeted strategy to engage the following stakeholder groups: 1) the City of New York and State of New Jersey, 2) select state agencies, 3) NDRC Most Impacted and Distressed counties, 4) NDRC Declared counties, 5) Tribal Areas within NDRC Most Impacted and Distressed and Declared counties, 6) potential non-governmental organization partners, and 7) the general public.

As discussed in Exhibit C (page 41), the State has consulted with both the City of New York and the State of New Jersey to develop this Phase 1 application. All three parties participated in several calls to discuss and refine respective application approaches to ensure they are regional in scope and synergistic in nature. The City and State of New York maintain a critically productive working relationship in the administration of recovery programs. In particular, the City is a subrecipient to the State and will work with local NYRCR Planning Committees to implement several projects developed through the NYRCR Program. The State and City also coordinate closely to ensure the alignment of the State's Acquisition for Redevelopment program. The City's Phase 1 application approach to serve vulnerable coastal

communities throughout the five boroughs aligns with the State's larger approach to ensure the development of resilient built and natural systems throughout the State.

The State will continue to coordinate with the City of New York and State of New Jersey to advance synergistic Phase 2 approaches that may include the advancement of specific projects, partnerships, or funding schemes. The City and State are in active consultation with the PANYNJ and the MTA to explore unique opportunities for cooperation on strategic resilience initiatives. In addition, the State of New York, City of New York, and State of New Jersey will continue to work together to ensure the successful administration of ongoing recovery programs.

In early January 2015 , GOSR convened senior staff from the key agencies outlined in Attachment D (pages 96-101) to participate in a NDRC Interagency Working Group to develop the State's overall strategy for this Phase 1 NDRC application. GOSR then charged agencies with completing a detailed survey to identify data to document unmet recovery needs, existing funding sources, potential partnerships, and potential strategies (i.e. project concepts and programs) to further refine in the Phase 2 NDRC application.

GOSR convened two separate webinars in early 2015 —one for Most Impacted and Distressed counties and one for Declared counties—to brief senior county staff on the two-phased NDRC application. Tribal Areas located in these counties were also invited to participate in the appropriate webinar. GOSR then asked participating counties and Tribal Areas to complete a detailed survey to identify data to document unmet recovery needs, existing funding sources, potential partnerships, and potential strategies (i.e. project concepts and programs) to further refine in the Phase 2 NDRC application. Declared counties were also asked to provide sub-county specific data to document Most Impacted and/or Distressed characteristics.

GOSR continues to leverage and build upon the dynamic stakeholder networks established in the development and implementation of the State's various recovery programs. For this NDRC Phase 1 application, GOSR engaged in ad hoc consultations with various non-governmental organizations (NGOs). The State may choose to engage a cross-section of NGOs as formal partners in Phase 2 application development. The NGOs engaged would depend upon the programmatic focus of the State's Phase 2 application.

To inform the public about the NDRC, the GOSR homepage provides a comprehensive list of NDRC Frequently Asked Questions and a link to the HUD Exchange NDRC page, along with an email address to which interested parties can submit questions.

The State will continue to coordinate with the City of New York and State of New Jersey to advance synergistic Phase 2 approaches that may include the advancement of specific projects, partnerships, or funding schemes. The City and State are in active consultation with the Port Authority of New York and New Jersey (PANYNJ) and the Metropolitan Transportation Authority (MTA) to explore unique opportunities for cooperation on strategic resiliency initiatives. In addition, the State of New York, City of New York, and State of New Jersey will continue to work together to ensure the successful administration of ongoing recovery programs.

Secondly, GOSR will formally reengage state agencies, eligible counties, and Tribal Areas, as appropriate, in the identification and enhancement of strategies to be developed in Phase 2. Select agencies and counties have already provided substantial input regarding potential strategies, partnerships, and funding sources. GOSR will continue to work with eligible target areas throughout the Phase 2 application process to demonstrate additional unmet recovery needs by examining new data and revisiting existing data, as appropriate.

Thirdly, GOSR will utilize existing relationships with NGOs—from advocacy groups to academic institutions to philanthropic foundations—to champion or create resilience strategies, additional partnerships, and funding and/or financing mechanisms in Phase 2. Whether these relationships were established through the State's ongoing recovery programs, or specifically for the NDRC, NGOs will play an invaluable role in ensuring the development and implementation of truly transformative projects that will dramatically enhance the resilience of a region. Moreover, NGOs will assist in the essential engagement of vulnerable populations.

GOSR's Phase 1 strategy builds upon GOSR's Action Plan Amendment Eight (APA8), detailed in Exhibit B (page 6-7). Vulnerable populations, identified through APA8 and other outreach strategies, will be more directly engaged in Phase 2, as the application moves from a systematic unmet recovery needs "framing" analysis to a project refinement and "implementation" process with which beneficiaries and the greater public can engage more directly. GOSR's direct engagement of eligible Tribal Areas, as well as partnerships with advocacy groups, represent the consideration of the needs of vulnerable populations in the development of this proposal. Consultations with these key stakeholders have deeply informed the systems-based approach to resilience outlined in this Phase 1 application. In particular, expert input from the New York State (NYS) Department of State (DOS), NYS Department of Environmental Conservation (DEC), and others has highlighted the cumulative impacts of coastal and riverine flooding—caused and exacerbated by climate change—on vulnerable populations and ecosystems. As discussed in Exhibit C (pages 40-41), the State is committed to advancing nature-based interventions, while simultaneously advancing critical upgrades to wastewater treatment facilities and sewer infrastructure that will reduce nitrogen loading and therefore safeguard investments in green infrastructure. Potential strategies, partnerships, and

funding sources identified by partners in Phase 1 will bear fruit in Phase 2, and the State is well-positioned to develop, implement, evaluate, and scale impactful resilience solutions.

Idea(s) or Concept(s)

State's Approach

New York State is looking to create regional, systems-based solutions for recovery and long-term resilience in riverine and coastal communities. The State's concept addresses environmental degradation risks in these communities. The NDRC presents an opportunity for the State to build upon and learn from its ongoing investments in long-term resilient recovery, acknowledging new and newly-understood risks and opportunities. Seizing this opportunity, the State endeavors to value, integrate, and operationalize a holistic approach to resilience in program and project development, implementation, and evaluation. This approach aims to realize a vision of physically, socially, economically, and environmentally resilient communities with access to fortified, integrated infrastructure; cutting-edge educational and business development opportunities; stronger and more resilient housing; and healthy, publically-accessible ecosystems. The State endeavors to engage partners across sectors to create scalable, systems-focused solutions to catalyze recovery and resiliency in vulnerable riverine and coastal communities. This approach aims to advance planning processes, programs, and capital projects that deliver multiple co-benefits, fostering systems that can most quickly respond to, and most effectively rebound from, severe weather events and other emergencies.

For the purposes of this Phase 1 application, GOSR has synthesized lessons learned from its recovery efforts to identify two dominant community typologies—coastal and riverine—which face extreme risk from severe flooding and climate change in the form of more frequent extreme weather events, increased precipitation, storm surge, sea level rise, and other factors.

While the communities in each of these two categories share many characteristics, they also face an array of unique challenges depending on geography and socioeconomics. Moreover, some communities, like those along the Hudson River, are vulnerable to both coastal and riverine flooding.

Should the State advance to Phase 2, GOSR will undertake a multi-systems analysis to better define the characteristics common to coastal and riverine community risk profiles. The State will then select pilot communities and work with partners to co-create innovative resilience solutions that are responsive to context and build upon GOSR's experience. The ultimate goal is to develop, implement, evaluate, and scale projects that provide multiple co-benefits and improve everyday quality of life through cross-sector collaboration. Evidenced by the incorporation of resilience factors in the State's funding and permitting processes discussed in Exhibit F (page 72), the State is beginning to operationalize resilience in tangible ways and NDRC funding will empower the State to leverage existing resilience efforts—and to catalyze new ones.

The State's two Rebuild by Design projects demonstrate the approach the State is proposing: true resilience in riverine and coastal communities necessitates a multi-jurisdictional, systems-based, regionally-directed, holistic outlook squarely focused on both protecting vulnerable populations and acknowledging the need to live with water and embrace nature-based features. These projects address multiple unmet recovery needs and provide an array of co-benefits to catalyze longer term recovery, mitigate risk, protect existing recovery investments, and improve everyday quality of life. Other precedential projects that correspond to the State's vision of resilience include:

- The Red Hook Integrated Flood Protection System in Brooklyn, which is an example of a City-State partnership to advance innovative large-scale infrastructure to protect and transform a vulnerable coastal community;
- The NY Rising Buyout Program's effort at Oakwood Beach, Staten Island, where an entire coastal neighborhood is being bought out and replaced with publicly accessible natural buffers to reduce the impact of future storms on surrounding areas and create new social, economic, and ecological opportunities; and
- The buyout and affordable housing project proposed by the Sidney Planning Committee's NY Rising Community Reconstruction (NYRCR) Plan, which is being implemented through the NYRCR Program and with FEMA HMGP funds, and involves buying out a vulnerable riverine neighborhood, converting that portion of the floodplain to green infrastructure, and building a new mixed-use neighborhood, including affordable housing, outside of the floodplain.

While these are excellent examples of systems-based, integrated resilience projects, New York State's analysis, detailed throughout this Phase 1 application, indicates the importance of pairing these solutions with environmental remediation efforts to reduce nitrogen loading in bodies of water, which can undermine investments in green infrastructure and compound vulnerability.

The State's approach builds upon lessons learned in New York's ongoing recovery, strives to protect the State's existing assets, including its storm recovery investments. GOSR is working with partner agencies and counties to incorporate the unmet need of coastal and riverine communities and is open to adapting the approaches should the State advance to Phase 2. New York State is seeking to augment its existing actions, ensuring the long-term benefits of the

State's existing recovery investments. This holistic, systems-based approach addresses physical, economic, and social resilience risks that would otherwise not be met.

New York State has made recovery investments setting the region on the path toward building back smarter and more resilient. GOSR's recovery programs in housing, infrastructure, small business development, and community reconstruction go beyond recovery activities that would return damaged communities to pre-disaster conditions—and instead implement activities that address disaster-related impacts and leave communities sustainably positioned to meet the needs of their post-disaster populations and to further prospects of growth.

New York State already has in place tools to ensure that its projects will be feasible and effective at supporting resilience. For example, the State utilizes cost-benefit analyses, risk analyses, and meetings with stakeholders. Should the State advance into Phase 2, it is expected that it will use these tools, and others.

Co-Benefits

This systems-based approach to recovery inherently creates co-benefits. Protecting riverine and coastal communities at risk of flooding creates or retains a strong social sphere, which ensures healthy community members and considers the needs of future generations; protects the environmental sphere, which creates a diverse ecological system that performs life-sustaining functions and provides essential resources for humans and other species; and ensures a healthy and diverse economy which adapts to change, provides long-term security to residents, and recognizes social and ecological limits. These spheres can appear separate from one another but they are intimately related.

As the State moves into implementation of its large-scale infrastructure projects, the State has developed and will continue to exemplify the general administrative and technical capacities

discussed in Phase 2 of the Capacity Factor, including procurement, contract management, rapid program design and launch, management of project design, and green (nature-based) infrastructure planning and implementation.

Vulnerable Populations

The impacts of climate change affect all New Yorkers, but those with low- and moderate-income, limited English proficiency, functional needs, the elderly, and the isolated, are often disproportionately burdened. In addition, small businesses often have less of an ability to recover. The holistic approach the State is pursuing not only knits together multiple spheres of recovery and rebuilding, it also seeks to address the specific challenges faced by these individuals and small businesses.

Working Regionally

The State's approach looks beyond traditional administrative boundaries and the minimum required geography, benefiting adjacent communities and the region at large. The State's work is extensively detailed earlier in this Exhibit, and includes consultation with both the City of New York and the State of New Jersey to develop this Phase 1 application. In addition, GOSR has consulted with counties across New York State on this application specifically, and has worked with counties in the agency's other recovery and rebuilding projects. State agencies are also central to this application as well as to GOSR's broader work. Finally, interstate agencies such as the PANYNJ and the MTA have been key to this application's development.

Adjacent areas will be positively impacted by the State's proposed regional approach as negative externalities that may go ignored in a more traditional, non-regional approach will be addressed. However, one drawback of regional approaches is that they may be more complicated

to pursue. Despite this, the State has successfully pursued a regional approach throughout its previous recovery and rebuilding work and continues to have the capacity to pursue this type of approach, as is clearly shown in Exhibit C (pages 30-42).

In addition, the State realizes that to fully address resilience, its approach must capitalize on the tremendous interdependencies among sectors. For example, connecting communities to public transportation is tied to economic opportunities for the community.

New York State's Overall Approach to Resilience

New York State's approach to resilience through GOSR's comprehensive recovery and rebuilding programs, as well as through other State agency's initiatives is to conserve and develop systems that can most quickly respond to, and most effectively rebound from, severe weather events and other emergencies. As discussed in Exhibit D (page 48), the State's Hazard Mitigation Plan informs the State's approach to analyzing need by identifying natural, technological, and human-caused hazards that have impacted, or have the potential to impact, the State. It then focuses on 15 natural hazards considered most likely to affect New York residents. The State also boasts the second greatest total number of U.S. Green Building Council Leadership in Energy and Environmental Design certified projects, second only to California.

In addition, many of the State's target areas and storm-impacted communities have demonstrated a commitment to community resilience, including ten communities within in the New York City metro area that participate in the National Flood Insurance Program Community Rating System (CRS). Seven of these communities are included in the Most Impacted and Distressed counties referenced in this application and this competition may provide an opportunity for New York State to encourage more communities to participate in the CRS.

Exhibit F Leverage
New York State
ExhibitFLeverage_NYS.pdf

Outcomes

The Governor's Office of Storm Recovery (GOSR) has focused its attention in Phase 1 of the NDRC application on assessing needs and developing an approach to resilience and will develop specific project concepts in Phase 2. Nonetheless, on the basis of GOSR's experience in developing and implementing recovery and resiliency projects, it is possible to forecast general outcomes of a systemic approach to resilience with solutions with multiple co-benefits, including but not limited to environmental restoration and economic revitalization. Prior to the State's advancement to Phase 2, it is not possible to determine what the State's final NDRC programs or projects will be, nor is it possible to determine if the proposed NDRC programs or projects will require a large-scale up-front effort or an ongoing program or initiative. Regardless, GOSR has the capacity and experience to stand up a large project and also to support a long-term program either directly or through partners.

GOSR's entire approach is focused on the development of solutions that will physically protect communities while providing social, economic, and environmental co-benefits—maximizing outcomes for the State's vulnerable communities. GOSR has extensive experience in delivering these types of integrated resiliency projects yielding multiple co-benefits. Precedent examples include the two Rebuild by Design projects GOSR is implementing in Staten Island and Nassau County, which have the potential to integrate protective engineered and green infrastructure to mitigate flood risk, improve water quality, restore ecosystems, reconnect communities to a revitalized waterfront, and advance social resilience through education and training opportunities.

Environmental and Social Sustainability Outcomes

The systems-based approach to resilience outlined in this Phase 1 application is intended to reduce the environmental and social vulnerability of communities that are also at risk from sea level rise and other impacts of climate change. This reflects the recognition that true resilience must incorporate a holistic understanding of both risk and vulnerability.

As described in Exhibit E (pages 61-64), one of the core concepts in the State's approach is the idea that environmental remediation and restoration—most prominently the reduction of nitrogen loading and other pollutants in both coastal and riverine communities—can produce outcomes that will not only increase the environmental well-being of communities, but also reduce physical risk from flooding connected to climate change. Positive environmental outcomes—which reinforce related economic and social outcomes—are therefore at the heart of GOSR's approach. Social resilience is also a critical part of GOSR's strategy. Through extensive grassroots participation in the NY Rising Community Reconstruction (NYRCR) Program, GOSR has documented how communities relied on both formal and informal institutions and assets at the most local levels to coordinate their recoveries after the Presidentially Declared disasters. Traditionally disinvested areas that are also at risk of flooding and other impacts of climate change therefore face magnified challenges. GOSR will work to develop projects that will produce social resilience outcomes by building community capacity and institutions in socially vulnerable places. Economic development outcomes in socially vulnerable communities may also reduce blight and increase employment among Section 3 persons and business concerns.

Measures of Success

A successful project developed using GOSR's integrated, systems-based approach will produce environmental benefits, increase the social resilience of vulnerable communities and populations, and contribute to economic development, while also protecting lives and property

from the physical impacts of disasters. A successful project will also leverage existing and potential commitments of outside resources, and will magnify the regional impact of existing or proposed projects. Project-level metrics of success will be developed in Phase 2 of the NDRC application process.

Leverage

Local and Regional Partners and Resources

Since its inception, GOSR has been working collaboratively with many different partners at the local and regional scales including governments, state agencies, non-governmental organization, foundations, and private-sector organizations. Through the NY Rising Community Reconstruction (NYRCR) Program, GOSR has entered into subrecipient agreements with local governments and state agencies to implement projects on behalf of GOSR. As of February 10, 2015, GOSR has executed a total of 53 subrecipient agreements to facilitate the implementation of projects developed by NYRCR Planning Committees. To reflect the grassroots, community-driven nature of the NYRCR Planning Process, the State seeks to empower the most local level of governments to implement projects and programs and to build grant management capacity with extensive technical assistance provided by GOSR. A list of potential funding and financing resources can be found in Attachment B (pages 83-89).

Risk Considerations and Insurance

GOSR has engaged with non-profits and private-sector organizations in the fields of insurance, sustainable finance, social impact investing, and innovative finance about opportunities to collaborate to leverage the impact of GOSR's investment and maximize the resilience of New York State. Areas of conversation have included: leveraging the reduction in insurance premiums that may result from resilience investments; catastrophe bonds and other

disaster-risk financing mechanisms; leveraging Community Reinvestment Act capital[14] in vulnerable communities to increase resilience; and opportunities for cooperation with Community Development Financial Institutions to provide capital resources and technical assistance to vulnerable communities.

Co-Benefits, Cost Savings, and Impacts on Public Funding

GOSR's system-based approach to resilience will provide tangible co-benefits—in some cases manifesting as cost-savings to third parties, including but not limited to insurance and financial institutions. In instances where investments generate third-party savings, there may be opportunities to provide co-funding opportunities for firms to invest in their community's resilience. In some cases, private investment may displace public funding, which could then be reallocated. Strategic investments in well-designed green and grey infrastructure may reduce costs related to disaster-related disruptions to the flow of goods and services, environmental

[14] The Community Reinvestment Act is intended to encourage depository institutions to help meet the credit needs of the communities in which they operate, including low- and moderate-income neighborhoods, consistent with safe and sound operations. It was enacted by the Congress in 1977 (12 U.S.C. 2901) and is implemented by Regulation BB (12 CFR 228). The regulation was substantially revised in May 1995 and updated again in August 2005. The CRA requires that each depository institution's record in helping meet the credit needs of its entire community be evaluated by the appropriate federal financial supervisory agency periodically. Members of the public may submit comments on a bank's performance. Comments will be taken into consideration during the next CRA examination. A bank's CRA performance record is taken into account in considering an institution's application for deposit facilities.

remediation, healthcare, and project operation and maintenance. Such investments can also create workforce development opportunities, increase property values and tax bases, and ultimately reduce the amount of federal disaster recover aid needed in the future.

Commitments Extending Approach beyond Most Impacted and Distressed Areas

As part of Governor Cuomo's transformative plan to improve the State's economic development model, the Regional Economic Development Council Consolidated Funding Application (CFA) was created to serve as the single entry point for access to economic development funding. This streamlined model now features scoring components to reward the inclusion of resilience measures in a grant application. This scoring methodology, along with the implementation of the Community Risk and Resiliency Act (discussed in Exhibit D, pages 52-53), serve to powerfully align the State's funding streams with a focus on creating a stronger, more resilient New York State. The State's programming of Hazard Mitigation Grant Program funding, which may be used statewide, is also intended to realize a systems-based approach to resilience as described in this application. As these steps demonstrate, the State has already begun to operationalize resilience.

Committed Leverage Resources

No financial commitments have been obtained at this time. However, as highlighted in Exhibit C (pages 33-36), the State has engaged in extensive partner outreach and highlighted the requirement that any partnership will include the need to leverage resources other than those secured through the NDRC.

Exhibit G Long-Term Commitment
New York State
ExhibitGLTCommit_NYS.pdf

New York State has taken significant steps to bolster its resilience to a host of threats, hazards, and vulnerabilities. The State's broad array of measures includes, but is not limited to, the creation of the Governor's Office of Storm Recovery (GOSR) to coordinate the State's resilient recovery, the passage of the Community Risk and Resiliency Act (CRRA, discussed in Exhibit D, pages 52-53), and the modification of the State's Regional Economic Development Council Consolidated Funding Application process to prioritize resilience (discussed in Exhibit F, page 72). Furthermore, the previously-discussed NYS Ready Commission, NYS Respond Commission, and NYS 2100 Commission recommended various approaches to operationalizing resilience in the State's policy-making and project implementation. (See Exhibit D for additional detail, page 48.)

Several other major resilience efforts have been undertaken by state agencies, all of which are represented on the State's NDRC Interagency Working Group. These efforts include, but are not limited to, the following:

- The Metropolitan Transportation Authority (MTA) and Port Authority of New York and New Jersey (PANYNJ): Superstorm Sandy caused almost over $7 billion in damage to the MTA and PANYNJ's transportation networks and revealed serious vulnerabilities to region's economy. Hardening and ensuring the reliability of the transportation system is critical for coastal and riverine communities throughout the region. For instance:
    - The lack of network resiliency or transportation options can reduce regional mobility and hinder economic growth; if one transportation link is broken due to extreme weather, it is critical that other options are available. Both agencies are promoting state-of-the-art Intelligent

Transportation Systems to allow for effective and coordinated coastal storm response plans for each transportation provider by allowing systems to work together.

  - The effects of salt from sea water continue to be seen in the form of electrical fires, failure of components, and equipment, and degradation of critical structures. While emergency repairs continue on an as-needed basis, the long-term effects and solutions to remediate and mitigate salt inundation continues to be unmet. A "Salt Working Group"—consisting of PANYNJ, MTA, City of New York, Con Edison of New York, Public Service Electric & Gas, New Jersey Transit, Amtrak, United Laboratories (UL), the National Electrical Manufacturers Association, Department of Homeland Security – Science & Technology, and the State of New York Division of Homeland Security & Emergency Services—is analyzing the on-going effects of sea salt on regional transportation and utility infrastructure, and the potential solutions to remediate and mitigate.

- The New York State Energy Research Development Authority (NYSERDA) has several programs to promote resilience. These include the Cleaner, Greener Communities program, which provides funding for regional sustainability planning and projects, and NY Prize, a first-in-the-nation $40 million competition to help communities create microgrids, where are standalone energy systems that can operate independently in the event of a power outage.
- The New York State Department of Transportation (DOT) is leveraging FEMA HMGP funds to increase the resilience of New York's bridges. Additionally,

guided by the NYS 2100 Commission, DOT has focused its capital investments to ensure that future risks are mitigated to the greatest extent possible.

- The New York State Department of State (DOS) Office of Planning and Development provides technical support to GOSR's NY Rising Community Reconstruction Program. The Local Waterfront Revitalization Program assists local communities in revising local coastal policies to advance planning for storm and climate resilience. DOS will also play a central role in the implementation of CRRA, collaborating with the New York State Department of Environmental Conservation (DEC) to prepare model local laws to help communities incorporate measures related to physical climate risk, and to provide guidance on the implementation of CRRA, including the use of resiliency measures that utilize natural resources and natural processes to reduce risk.
- The Office of Parks Recreation and Historic Preservation (OPRHP) has incorporated the goal of resilience into its planning and activities, and employs strategies that focus on building living shorelines, using green infrastructure, and implementing sustainable practices. OPRHP is in the process of identifying facilities and infrastructure in state parks and historic sites that are highly vulnerable to flooding and damage from coastal storms. This assessment will incorporate impacts on the built and natural environment and will enable the creation of park-specific adaptation plans that minimize or mitigate the negative impacts of climate change.
- The Environmental Facilities Corporation (EFC) is leveraging its programs to encourage resiliency projects that protect future water infrastructure investments,

including drinking water and waste water treatment, pump stations, sewers, storm sewers, green infrastructure, water mains, outfalls, and intake and collection systems. For instance, EFC creates the State Revolving Fund for clean water and drinking water projects including the Storm Mitigation Loan Program and the Hurricane Emergency Loan Program and has also been working with Suffolk County to develop a program to address inadequate individual onsite treatment systems (septic systems).

- DEC's Office of Climate Change leads the development of programs and policies that mitigate greenhouse gas emissions and adapt to climate change where it cannot be avoided. The Climate Smart Communities program supports local governments in meeting these goals. As described above, DEC will work with DOS to implement CRRA.
- The New York State Division of Homeland Security and Emergency Services (DHSES) delivers resilient recovery projects through the Hazard Mitigation Grant Program (HMGP). To date, DHSES has approved $366 million in FEMA HMGP fund for Sandy projects.

Goal Outcomes and Metrics

GOSR's recovery and rebuilding goals are twofold: (1) address urgent housing, business assistance and infrastructure needs in affected communities and (2) integrate long-term storm resiliency into recovery, rebuilding and planning efforts across all programs. As detailed in GOSR's two year report, *New York Rising: 2012-2014*, the Agency has made significant progress towards these goals. For example, as of October 2014, 1,798 applicants have opted for one or more of GOSR's housing resilience options (elevation, mitigation or bulkhead). In

addition, the Agency has granted $20.8 million to 638 small businesses, enabling 6,490 positions to be retained at businesses receiving assistance.[15]

Due to the number and diversity of the climate change mitigation and adaptation efforts described above, and the number of different agencies involved, it is not possible to specify baseline and goal outcomes for each individual program. If New York State advances to Phase 2 of the NDRC, the State will develop a general set of performance metrics (value of property protected, impact on employment, environmental remediation, etc.), as well as baseline targets and goals for projects and programs that are proposed through the NDRC.

[15] *New York Rising: 2012-2014 Housing, Small Business, Community Reconstruction Plans, Infrastructure*. New York State Governor's Office of Storm Recovery. < http://stormrecovery.ny.gov/sites/default/files/uploads/gosr_report_letter_full_high.pdf>.

Action Plan

Grantee: New York

Grant: B-13-DS-36-0002

LOCCS Authorized Amount:	$ 35,800,000.00
Grant Award Amount:	$ 35,800,000.00
Status:	Reviewed and Approved
Estimated PI/RL Funds:	
Total Budget:	$ 35,800,000.00

Funding Sources

No Funding Sources Found

Narratives

Executive Summary:

The New York State Public Housing Resiliency Pilot Project was awarded funding through the HUD National Disaster Resilience Competition to enhance the resiliency of four storm-impacted Public Housing Authorities (PHAs). The New York Governor's Office of Storm Recovery (GOSR) will oversee the project to assess and address the critical and growing physical resilience needs of housing assets vulnerable to coastal and riverine flooding and the related impacts of climate change, including sea-level rise, increased precipitation, and extreme temperature. The project will also include a workforce development component to assist with meeting the economic and social resilience needs of residents who are vulnerable to socioeconomic stressors and environmental shocks. The project has two components: 1) piloting innovative, replicable mitigation and resiliency interventions at select public housing properties, and 2) creating job training and placement workforce development opportunities. The State will provide grant funding to five sites at four PHAs. The four PHA partners are Freeport, Long Beach, Town of Hempstead, and Binghamton. The State will implement site-specific resiliency interventions based on the Enterprise Community Partners' Ready to Respond Toolkit and Multifamily Housing Resilience Strategies, including but not limited to: resilient new development (at Freeport Housing Authority); resiliency retrofits to building envelope (at all other sites); nature-based stormwater management features; nature-based coastal protection features; and resilient back-up power/power generation systems. The construction and site planning techniques include: protection features that reduce vulnerability; adaptation features that respond to changing climate conditions; redundancy features that maintain critical services during an event, enabling residents to shelter in place in low-level weather events; and social resilience features that facilitate community cohesiveness, increase the quality of life through exposure to natural features and increase economic opportunities through workforce development. Consulting engineers have evaluated each of the five sites for the suitability of these resilience strategies, which are based on best practices and field research by technical experts and informed by FEMA guidance, technical analysis, and case studies. GOSR engaged Enterprise Community Partners, residential construction engineers, building science professionals, developers, and housing finance experts to identify appropriate resilience measures for each site. In consultation with architects and engineers, GOSR crafted site-specific strategies. GOSR has partnered with Opportunities Long Island (OLI) to implement the second component. The workforce development component will create targeted employment and training opportunities for residents of the three participating Long Island PHAs. OLI will educate, train, and connect up to twenty (20) PHA residents with building trade opportunities. This pre-apprenticeship program, offering direct placement into employment will create a pathway to employment in construction trades. The construction of new housing and rehabilitation of existing housing are eligible activities which meet the LMI National Objective. The targeted PHA sites overwhelmingly serve senior and family households with incomes below 50 percent of Area Median Income. At least 51 percent of the units in each building assisted will beoccupied by an LMI household. These projects are federally funded PHAs and have housing goals to ensure equal opportunity and to affirmatively further fair housing objectives to qualify for annual allocations of HUD resources. GOSR will monitor the efforts of the PHAs to satisfy and confirm that PHAs meet their statutory obligation to AFFH. The workforce development component is an eligible public-service activity with a limited clientele of LMI persons.

MID-URN Areas:

GOSR ultimately identified five properties at four PHAs in two Target Areas – Broome and Nassau counties – which have the highest remaining unmet recovery need (URN) for rental housing in the New York State MID-URN areas after accounting for assistance provided by GOSR's NY Rising Housing Recovery Programs and other sources.
GOSR used the best available FEMA PA data and internal program data to identify PHA-owned facilities sited in the 100-year or 500-year floodplain in Target Areas with housing URN. GOSR then analyzed this subset of properties for a tie-back to the qualified disaster(s), site-specific unmet needs, and geographic and demographic considerations with the goal of serving vulnerable populations and addressing a range of resiliency challenges.

Key Agencies, Partners, Positions, Personnel:

GOSR will partner with several agencies and organizations to carry out this project. These include the NYS Department of Homes and Community (HCR) Renewal Housing Finance Agency, Binghamton Public Housing Authority (PHA), Freeport PHA, Town of Hempstead PHA, Long Beach PHA, Enterprise Community Partners and Opportunities Long Island. In addition, the State – through GOSR, in partnership with HCR, Enterprise Community Partners and WegoWise– will investigate opportunities to increase resilience and further reduce the energy demand of these buildings through smaller scale retrofits such as weatherproofing and lighting upgrades.
The four PHA Partners are the Freeport Housing Authority, Long Beach Housing Authority, Town of Hempstead Housing Authority, and Binghamton Housing Authority. These Partners identified project sites that sustained damage during Superstorm Sandy, Hurricane Irene, and/or Tropical Storm Lee. Damage included flooding, damage to electrical and mechanical systems, loss of power creating unsafe conditions, and loss of habitability. The five properties selected for this project represent different building typologies including low-rise, high-rise, coastal and riverine sites, senior and family facilities, and are ideal candidates for performance retrofitting and/or new resilient new construction. The new construction project achieves substantial support utilizing HUD's Section 18 program by bolstering the FEMA disaster relief funds and CDBG-DR funds which provide access to private debt and equity investment for a resilient new affordable housing project.
The PHAs will be responsible for using CDBG-NDR funds to carry out activities in a manner satisfactory to GOSR and consistent with any standards required as a condition of providing these funds. The use of the funds will result in either retrofitting or new construction of five Public Housing Authority properties to the benefit of the residents of these specific properties.
Enterprise Community Partners Inc. will be responsible for supporting GOSR with project design; facilitating design process with PHAs to integrate green, resilience and health measures into a comprehensive rehabilitation scope; provide training and technical assistance to PHAs building staff to help establish best practices in Operations and Maintenance and asset management; provide technical assistance to GOSR as needed; coordinate a PHA resilience Learning Collaborative and Memorialize lessons learned.
Opportunities Long Island will be responsible for providing outreach, screening and program selection for residents of the PHAs in Freeport, Town of Hempstead and Long Beach. OLI will identify, select and enroll 20 eligible residents in an apprenticeship preparation training program and upon successful completion, work on placing graduates of the program on construction projects.
Grantee key personnel are as follows:
Robert Miller, Chief Financial Officer, GOSR
Charles Mathew, Director of Finance and Budget, GOSR
Thehbia Hiwot, Deputy Executive Director and Managing Director of Housing, GOSR
Paul Lozito, Director of Policy and Affordable Housing, GOSR
Shantel Asante-Kissi, Senior Program Manager, GOSR
Jane Brogan, Managing Director of Policy, GOSR
Leo Quigley, Policy Manager, GOSR
Simon McDonnell, Director of Research and Strategic Analysis, GOSR
David Burgy, Senior Research and Policy Analyst, GOSR

Project Summary

Project #	Project Title	Grantee Activity #	Activity Title
9999	Restricted Balance	*No activities in this project*	
Admin	Administration	NYS-NDR-Administration	Administration
LTC	Long-Term Commitment	NYS-LTC-CRRA	Long Term Commitment CRRA
NDR	Resilience Work	NYS-NDR-PHA-Binghamton	Binghamton PHA Resilience
		NYS-NDR-PHA-Freeport	Freeport PHA Resilience
		NYS-NDR-PHA-Hempstead	Hempstead PHA Resilience
		NYS-NDR-PHA-LongBeach	Long Beach PHA Resilience
		NYS-NDR-Workforce-OLI	OLI Workforce Development
OV	Outcome Value	NYS-OV-Economic-Quant1	Economic Metric 1
		NYS-OV-Economic-Quant2	Economic Metric 2
		NYS-OV-Economic-Quant3	Economic Metric 3
		NYS-OV-Environmental-Quant	Environmental Metric

		NYS-OV-Resilience-Quant1	Resilience Metric 1
		NYS-OV-Resilience-Quant2	Resilience Metric 2
		NYS-OV-Resilience-Quant3	Resilience Metric 3
		NYS-OV-Social-Quant1	Social Metric 1
		NYS-OV-Social-Quant2	Social Metric 2
		NYS-OV-Social-Quant3	Social Metric 3
SL	Supporting Leverage	NYS-SL-None	Supporting Leverage None

Activities

Project # / Title: Admin / Administration

Grantee Activity Number: NYS-NDR-Administration
Activity Title: Administration

Activity Type:
Administration

Activity Status:
Under Way

Project Number:
Admin

Project Title:
Administration

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 1,790,000.00
Most Impacted and Distressed Budget:	$ 1,790,000.00
Other Funds:	$ 0.00
Total Funds:	$ 1,790,000.00

Benefit Report Type:
NA

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 1,790,000.00

Location Description:

25 Beaver Street, 5th Floor, New York, NY

Activity Description:

The goal of this activity is for New York State to administer the overall project delivery. The required 90 day projections are attached to this activity.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Activity Supporting Documents

Document 20180711-NDR-90DayProjections-Final-ForUpload.xlsx

Project # / Title: LTC / Long-Term Commitment

Grantee Activity Number: NYS-LTC-CRRA
Activity Title: Long Term Commitment CRRA

Activity Type:
NDR - Long Term Commitment

Activity Status:
Under Way

Project Number:
LTC

Project Title:
Long-Term Commitment

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
02/01/2017 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
02/01/2017 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Area Benefit (Census)

LMI%:	

Activity is being carried out by Grantee:

No

Activity is being carried out through:

Organization carrying out Activity:

New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:

New York State

Activity Description:

The goal of this activity is to increase the resiliency of municipalities to withstand sea level rise, storm surge, and in-land flooding. The anticipated outcome is to enhance the capacity of municipalities to further control land use in the floodplain and demonstrate consideration for improving community resilience to sea level rise, storm surge, and in-land flooding. DEC currently provides model ordinances that include language municipalities must adopt to participate in the National Flood Insurance Program. Updating an ordinance is a legislative act. The State will track the number of municipal floodplain ordinances updated to incoporate state flood risk management guidance and to improve community resilience to sea level rise, storm surge, and in-land flooding. New York State Department of Environmental Conservation's Floodplain Management Section tracks when local laws have been submitted and approved. For this activity, the State will track the number of legislative actions taken to improve resiliency. The State projects that 20 legislative actions will be taken to improve resiliency.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Project # / Title: NDR / Resilience Work

Grantee Activity Number: NYS-NDR-PHA-Binghamton

Activity Title: Binghamton PHA Resilience

Activity Type:

Rehabilitation/reconstruction of residential structures

Activity Status:

Under Way

Project Number:

NDR

Project Title:

Resilience Work

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Low/Mod: Benefit to low- and moderate-income persons/families

Total Budget:	$ 3,610,667.00
Most Impacted and Distressed Budget:	$ 3,610,667.00
Other Funds:	$ 0.00
Total Funds:	$ 3,610,667.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# Renter Households	224	224		100.00
# of Households	224	224		100.00

Proposed Accomplishments	Total
# of Multifamily Units	224
# of Housing Units	224
# of Properties	1

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 3,610,667.00

Location Description:

Binghamton Housing Authority
North Shore Towers and Village
45 Exchange Street
Binghamton, NY
Latitude 42.096838, Longitude -75.909638

Activity Description:

The goal of this activity is to carry out the project delivery of providing resilient retrofitting at North Shore Towers in Binghamton NY to benefit the residents of this PHA facility. The project delivery includes partnership with Enterprise Community Partners to project design with team, Energy Benchmarking, Partnership with DASNY to procure design and construction teams to complete construction at the PHA facility.

Environmental Assessment: UNDERWAY

Environmental Reviews: None

Grantee Activity Number:	**NYS-NDR-PHA-Freeport**
Activity Title:	**Freeport PHA Resilience**

Activity Type:
Construction of new replacement housing

Activity Status:
Under Way

Project Number:
NDR

Project Title:
Resilience Work

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Low/Mod: Benefit to low- and moderate-income persons/families

Total Budget:	$ 5,500,000.00
Most Impacted and Distressed Budget:	$ 5,500,000.00
Other Funds:	$ 0.00
Total Funds:	$ 5,500,000.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# Renter Households	100	100		100.00
# of Households	100	100		100.00

Proposed Accomplishments	Total
# of Multifamily Units	100
# of Housing Units	100

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 5,500,000.00

Location Description:

Freeport Housing Authority
Moxey Rigby Apartments (New Location)
195 East Merrick Road
Freeport, NY 11520
Current address - Buffalo Avenue and East Merrick Road
Latitude 40.654855, Longitude -73.570738

Activity Description:

The goal of this activity is to carry out the project delivery of providing new construction of 100 units at Freeport Housing Authority's Moxey Rigby facility in Freeport, NY to benefit the residents of the Moxey Rigby Apartments. The project delivery includes partnership with Enterprise Community Partners to project design with team and Benchmarking Energy Use at the facility.

Environmental Assessment: COMPLETED

Environmental Reviews: None

Grantee Activity Number: NYS-NDR-PHA-Hempstead
Activity Title: Hempstead PHA Resilience

Activity Type:
Rehabilitation/reconstruction of residential structures

Activity Status:
Under Way

Project Number:
NDR

Project Title:
Resilience Work

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Low/Mod: Benefit to low- and moderate-income persons/families

Total Budget:	$ 13,623,666.00
Most Impacted and Distressed Budget:	$ 13,623,666.00
Other Funds:	$ 0.00
Total Funds:	$ 13,623,666.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# Renter Households	112	112		100.00
# of Households	112	112		100.00

Proposed Accomplishments	Total
# of Multifamily Units	112
# of Housing Units	112
# of Properties	2

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 13,623,666.00

Location Description:

Town of Hempstead
Mill River Gardens
2900 Rockaway Avenue
Oceanside, NY 11572
Latitude 40.642652, Longitude -73.655963
Inwood Gardens
255 Lawrence Avenue
Inwood, NY 11096
Latitude 40.622225, Longitude -73.738731

Activity Description:

The goal of this activity is to carry out the project delivery of providing resilient retrofitting at Inwood Gardens and Mill River Gardens in Oceanside and Inwood, NY to benefit the residents of these PHA facilities. The project delivery includes partnership with Enterprise Community Partners to project design with team, Energy Benchmarking, Partnership with DASNY to procure design and construction teams to complete construction at the PHA facility.

Environmental Assessment: UNDERWAY

Environmental Reviews: None

Grantee Activity Number: NYS-NDR-PHA-LongBeach
Activity Title: Long Beach PHA Resilience

Activity Type:
Rehabilitation/reconstruction of residential structures

Activity Status:
Under Way

Project Number:
NDR

Project Title:
Resilience Work

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Low/Mod: Benefit to low- and moderate-income persons/families

Total Budget:	$ 11,115,667.00
Most Impacted and Distressed Budget:	$ 11,115,667.00
Other Funds:	$ 0.00
Total Funds:	$ 11,115,667.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# Renter Households	108	108		100.00
# of Households	108	108		100.00

Proposed Accomplishments	Total
# of Multifamily Units	108
# of Housing Units	108
# of Properties	1

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 11,115,667.00

Location Description:

Long Beach Housing Authority
Channel Park Homes
500 Center Street
Long Beach, NY 11561
Latitude 40.591116, -73.66589

Activity Description:

The goal of this activity is to carry out the project delivery of providing resilient retrofitting at Channel Park Homes in Long Beach, NY to benefit the residents of this PHA facility. The project delivery includes partnership with Enterprise Community Partners to project design with team, Energy Benchmarking, Partnership with DASNY to procure design and construction teams to complete construction at the PHA facility.

Environmental Assessment: UNDERWAY

Environmental Reviews: None

Grantee Activity Number: NYS-NDR-Workforce-OLI
Activity Title: OLI Workforce Development

Activity Type:
Public services

Activity Status:
Under Way

Project Number:
NDR

Project Title:
Resilience Work

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Low/Mod: Benefit to low- and moderate-income persons/families

Total Budget:	$ 160,000.00
Most Impacted and Distressed Budget:	$ 160,000.00
Other Funds:	$ 0.00
Total Funds:	$ 160,000.00

Benefit Report Type:
Direct (Person)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Persons	13	13		100.00
# of Cases closed	20	20		100.00
# of Cases opened	20	20		100.00

Proposed Accomplishments	Total
# of Non-business Organizations benefitting	1

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 160,000.00

Location Description:

Workforce development sites vary depending on the trade. Opportunities Long Island will select the training sites for program participants. The mailing address for Opportunities Long Island is 390 Rabro Drive in Hauppauge. NY 11788. Latitude 40.810430, Longitude -73.232971.

Activity Description:

The workforce development component will create targeted employment and training opportunities for residents of the three participating Long Island PHAs. OLI will educate, train, and connect up to twenty (20) PHA residents with building trade opportunities. This pre-apprenticeship program, offering direct placement into employment will create a pathway to sustainable, high-wage employment in construction trades.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Project # / Title: OV / Outcome Value

Grantee Activity Number: NYS-OV-Economic-Quant1
Activity Title: Economic Metric 1

Activity Type:
NDR - Economic Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Person)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Persons	20	20		100.00

Proposed Accomplishments	Total
# of people enrolled	20

Activity is being carried out by Grantee:

No

Activity is being carried out through:

Organization carrying out Activity:

New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:

Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to provide workforce development program participants with a vehicle for economic advancement. The anticipated outcome is to enhance the economic resilience of program participants. The State will track the number of participants enrolled in the program. For this activity, the State will track the number of people enrolled. The baseline for this activity is zero people enrolled in the program. The projection for this activity is 20 people enrolled in the program.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Economic-Quant2
Activity Title: Economic Metric 2

Activity Type:
NDR - Economic Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Person)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Persons	16	16		100.00

Proposed Accomplishments	Total
# of People Trained	16

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to provide workforce development program participants with a vehicle for economic advancement. The anticipated outcome is to enhance the economic resilience of program participants. The State will track the number of participants who complete the program. For this activity, the State will track the number of people trained. The baseline for this activity is zero people trained in the program. The projection for this activity is 16 people trained in the program.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Economic-Quant3
Activity Title: Economic Metric 3

Activity Type:
NDR - Economic Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Person)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Persons	13	13		100.00

Proposed Accomplishments	Total
# of people employed	13

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to provide workforce development program participants with a vehicle for economic advancement. The anticipated outcome is to enhance the economic resilience of program participants. The State will track the number of participants who complete the program and are placed into jobs. For this activity, the State will track the number of people employed in the building and construction trades after enrolling in and completing the workforce development program. The baseline for this activity is zero people employed. The projection for this activity is 13 people employed.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Environmental-Quant
Activity Title: Environmental Metric

Activity Type:
NDR - Environmental Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Households	544	544		100.00

Proposed Accomplishments	Total
% reduction in kWh used	10

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to reduce energy usage by PHAs. The anticipated outcome is to reduce the environmental footprint of each PHA and energy costs. The State will utilize WegoWise to collect, track, analyze, and benchmark energy usage evidenced by energy consumption reports or utility bills. For this activity, the State will track the percent reduction in kWh used. The baseline for this activity is a zero percent reduction in kWh used. The projection for this activity is a 10 percent reduction in kWh used.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Resilience-Quant1
Activity Title: Resilience Metric 1

Activity Type:
NDR - Resilience Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Households	544	544		100.00

Proposed Accomplishments	Total
# of PHA facilities constructed or retrofitted with resiliency measures	5

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to increase the resiliency of new or existing PHA facilities as a whole. The anticipated outcome is to enhance the ability of each PHA facility to withstand a disaster and successfully recover. The State will track the installation of resiliency measures that will enhance the operational reliability of new or existing facilities in the event of a disaster. For this activity, the State will track the number of PHA facilities constructed or retrofitted with resiliency measures. The baseline for this activity is zero PHA facilities constructed or retrofitted with resiliency measures. The projection for this activity is five PHA facilities constructed or retrofitted with resiliency measures.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Resilience-Quant2
Activity Title: Resilience Metric 2

Activity Type:
NDR - Resilience Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Households	544	544		100.00

Proposed Accomplishments	Total
# of PHA housing units benefiting from resiliency measures	544

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to increase the resiliency of new or existing PHA facilities as a whole. The anticipated outcome is to enhance the ability of each PHA facility to withstand a disaster and successfully recover. The State will track the installation of resiliency measures that will enhance the operational reliability of new or existing facilities in the event of a disaster. For this activity, the State will track the number of PHA housing units benefiting from resiliency measures. The baseline for this activity is zero PHA housing units benefiting from resiliency measures. The projection for this activity is 544 PHA housing units benefiting from resiliency measures.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Resilience-Quant3
Activity Title: Resilience Metric 3

Activity Type:
NDR - Resilience Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Area Benefit (Census)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Persons	18636815	5238745	3026510	44.35

Proposed Accomplishments	Total
# of legislative actions taken to improve resiliency	20

LMI%:	

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
New York State

Activity Description:

The goal of this activity is to increase the resiliency of municipalities to withstand sea level rise, storm surge, and in-land flooding. The anticipated outcome is to enhance the capacity of municipalities to further control land use in the floodplain and demonstrate consideration for improving community resilience to sea level rise, storm surge, and in-land flooding. DEC currently provides model ordinances that include language municipalities must adopt to participate in the National Flood Insurance Program. Updating an ordinance is a legislative act. The State will track the number of municipal floodplain ordinances updated to incoporate state flood risk management guidance and to improve community resilience to sea level rise, storm surge, and in-land flooding. New York State Department of Environmental Conservation's Floodplain Management Section tracks when local laws have been submitted and approved. For this activity, the State will track the number of legislative actions taken to improve resiliency. The baseline for this activity is zero legislative actions taken to improve resiliency. The projection for this activity is 20 legislative actions taken to improve resiliency.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Social-Quant1
Activity Title: Social Metric 1

Activity Type:
NDR - Social Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Households	544	544		100.00

Proposed Accomplishments	Total
# of residents participating in planning events	50

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to increase social cohesion of PHAs. The anticipated outcome is to establish more robust PHA community engagement. The State will track the number of PHA residents involved in planning events. For this activity, the State will track the number of residents participating in planning events. The baseline for this activity is zero residents participating in resilience planning events. The projection for this activity is 50 residents participating in resilience planning events.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Social-Quant2
Activity Title: Social Metric 2

Activity Type:
NDR - Social Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Households	544	544		100.00

Proposed Accomplishments	Total
# of PHA communities participating in resilience learning collaborative	5

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to increase social cohesion of PHAs. The anticipated outcome is to establish more robust PHA community engagement. The State will track the number of PHA communities that participate in the PHA Resilience Learning Collaborative. For this activity, the State will track the number of PHA communities participating in the resilience learning collaborative. The baseline for this activity is zero PHA communities participating in the resilience learning collaborative. The projection for this activity is five PHA communities participating in the resilience learning collaborative.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Grantee Activity Number: NYS-OV-Social-Quant3
Activity Title: Social Metric 3

Activity Type:
NDR - Social Value

Activity Status:
Under Way

Project Number:
OV

Project Title:
Outcome Value

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Direct (Households)

Proposed Beneficiaries	Total	Low	Mod	Low/Mod%
# of Households	544	544		100.00

Proposed Accomplishments	Total
# of resilience plans created	5

Activity is being carried out by Grantee:
No

Activity is being carried out through:

Organization carrying out Activity:
New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:
Storm-damaged public housing in New York State managed by Freeport Housing Authority, Town of Hempstead Housing Authority, Long Beach Housing Authority, and Binghamton Housing Authority. Workforce development site on Long Island, NY.

Activity Description:

The goal of this activity is to increase the resiliency of PHAs and PHA Residents. The anticipated outcome is to enhance the ability of each PHA and its residents to withstand a disaster and successfully recover. The State will track the creation of one resilience plan at each PHA facility. For this activity, the State will track the number of resilience plans created. The baseline for this activity is zero resilience plans created. The projection for this activity is five resilience plans created.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Project # / Title: SL / Supporting Leverage

Grantee Activity Number: NYS-SL-None
Activity Title: Supporting Leverage None

Activity Type:
NDR - Supporting Leverage

Activity Status:
Under Way

Project Number:
SL

Project Title:
Supporting Leverage

Projected Start Date:
01/25/2017

Projected End Date:
09/30/2022

Project Draw Block by HUD:
Not Blocked

Project Draw Block Date by HUD:
10/01/2022 by David Burgy

Activity Draw Block by HUD:
Not Blocked

Activity Draw Block Date by HUD:
10/01/2022 by David Burgy

Block Drawdown By Grantee:
Not Blocked

National Objective:
Not Applicable (for Planning/Administration or Unprogrammed Funds only)

Total Budget:	$ 0.00
Most Impacted and Distressed Budget:	$ 0.00
Other Funds:	$ 0.00
Total Funds:	$ 0.00

Benefit Report Type:
Area Benefit (Census)

LMI%:	

Activity is being carried out by Grantee:

No

Activity is being carried out through:

Organization carrying out Activity:

New York State

Proposed budgets for organizations carrying out Activity:

Responsible Organization	Organization Type	Proposed Budget
New York State	State	$ 0.00

Location Description:

New York State

Activity Description:

There is no supporting leverage.

Environmental Assessment: EXEMPT

Environmental Reviews: None

Action Plan History

Version	Date
B-13-DS-36-0002 AP#1	04/28/2017
B-13-DS-36-0002 AP#2	07/28/2017
B-13-DS-36-0002 AP#3	10/30/2017
B-13-DS-36-0002 AP#4	07/23/2018